SONY®

Color Video Printer

Instructions For Use   Page 2

Before operating this unit, please read this manual
thoroughly and retain it for future reference.

Mode d'emploi   Page 100

Avant la mise en service de cet appareil, prière de lire
attentivement ce mode d'emploi que l'oń conservera
pour toute référence ultérieure.

Gebrauchsanweisung   Seite 198

Bevor Sie dieses Gerät verwenden, lesen Sie diese
Anleitung bitte sorgfältig durch, und bewahren Sie sie
für später zum Nachschlagen auf.

UP-5500
UP-5600MD
UP-5600MDP

MC-Service

Owner's Record

The model and serial numbers are located at the rear. Record these number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____

Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For UP-5600MD/5600MDP
Symbols on the products

● This symbol inidcates type B equipment classified in accordance with IEC Publication 601-1 Safety of medical electrical equipment.

This symbol indicates the equipotential terminal which brings the various parts of a system to the same potential.

For UP-5600MD

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the customers in Europe
Important safequards/notices for use in the medical environments

1. All the equipments connected to this unit shall be certified according to Standard IEC601-1, IEC950, IEC65 or other IEC/ISO Standards applicable to the equipments.
2. When this unit is used together with other equipment in the patient area*, the equipment shall be either powered by an isolation transformer or connected via an additional protective earth terminal to system ground unless it is certified according to Standard IEC601-1.

* Patient Area
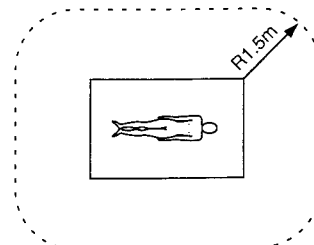
3. The leakage current could increase when connected to other equipment.

For the customers in the United Kingdom

WARNING

THIS APPARATUS MUST BE EARTHED

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:

  Green-and-yellow: Earth
  Blue: Neutral
  Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Table of Contents

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Table of Contents (continued)

About This Manual

This manual covers the following UP-5500 series color video printers.
- UP-5500
- UP-5600MD
- UP-5600MDP

Wherever the operation or any other item differs between the models, this manual clearly describes those differences.

Organization of this manual

This manual is divided into four chapters. This section explains the organization of this manual.

Introduction
Describes the features and system configuration of the color video printer.

Operation
Describes actual printing once all connections and adjustments have been made, as explained in the next chapter. You will be able to make various types of printouts after reading through this chapter.

Installation and adjustment
Describes how to make connections and make adjustments using the menus displayed on the video monitor and printer window display. Once all connections and adjustments have been made, there should be no need to perform these operations again during normal printing operations. These operations must, however, be performed after reinstalling, or if the picture quality degrades, or if adjustment becomes necessary because the peripheral equipment is changed. Also covered is the use of the printer's remote control unit (not supplied).

Others
Notes the precautions to be observed when using the printer, lists errors, warnings and their handling, and explains troubleshooting. Also provided is information on the locations and functions of parts and controls, and the on-screen messages and menus used to operate the printer. Should you encounter any unfamiliar terms or items while reading this manual, consult the index at the end of the manual.

Conventions used

Cross references
Throughout this manual you will find references to other sections of the manual that contain related information.

Important note
Be sure to read the sections of the manual marked **Note** . They explain points that you should be aware of to operate the printer correctly and prevent malfunctions.

Index
Use the index, in addition to the table of contents, to find information you need when using the printer.

Monitor displays
Some monitor displays illustrated in this manual may differ slightly from the acutal display. The operation of the printer, however, remains as described in this manual.

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System Overview

The UP-5500/5600MD/5600MDP color video printer is designed for capturing images from video equipment, computers and medical equipment devices and for printing out high-resolution images, either in 256 shades in full color (about 300 dpi). You can make various types of printouts. You can also add a caption onto the printout. You can operate the daily printer operation by using the buttons and setup the printer interactively by picking from displayed menus. You can also use the printer as peripheral equipment of the computer by mounting the UPK-5502SC Digitanl Interface Board onto the printer.

Printouts that can be made with the printer

Printout of a full-size image (page 15)

Printout of 16 reduced images (page 23)
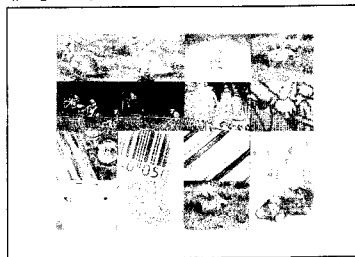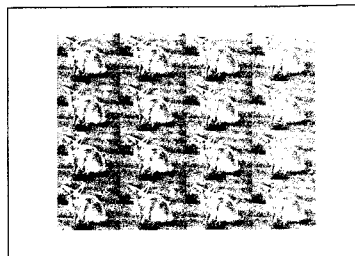
Printout of two reduced images (page 23)

Printout of identical images (page 31)

Printout of four reduced images (page 23)

Printout with an insert (page 33)

Printout of eight reduced images (page 23)

Printouts with a caption (page 37)

SAMPLE 123
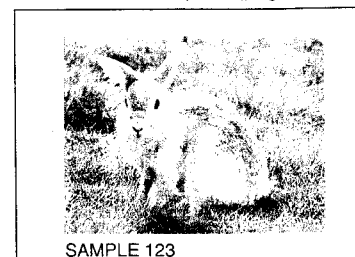
In addition to the above printouts of multiple reduced images, printouts of multiple reduced images with white borders can be made.

The following shows an example printer system configuration.

Video source
Provides the video input for
printing. Connect a video
source such as video
recorder, video disk player
or similarly.

Video monitor
Displays the images received from
the video source (source image) and
the image to be printed (memory
source). Also displays the printer
menus and messages.
When the printer power switch is set
to off, you can view the image of the
video source.

Color video printer

FS-30
Foot switch (not supplied)

RM-91
Remote control
unit (not supplied)

RM-5500
Remote control
unit (not supplied)

These units allow you to operate the printer remotely.

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Before Printing

This section describes the following operations that must be made prior to starting printing after mounting the paper tray and paper cover on the printer and making the necessary connections.
• Loading an ink ribbon cartridge (see page 8)
• Loading paper (see page 11)
• Selecting the input signal (see page 13)
Once the above operations have been completed, there should be no need to repeat them during routine printing. Perform them only when absolutely necessary.
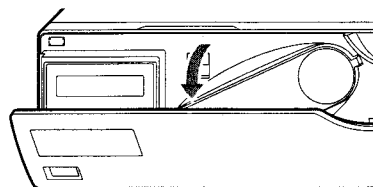
Loading an Ink Ribbon Cartridge

To make printouts, an ink ribbon cartridge (an ink ribbon holder which has been loaded with an ink ribbon) and paper must be loaded. The cartridge and paper must be compatible. (see "Ink Ribbon and Paper" page 82)
Load the ink ribbon into the supplied ink ribbon holder, then load the ink ribbon cartridge into the printer's ribbon compartment. The supplied ink ribbon holder can be used for both the color printing and transparency printing.

Notes
• Before attempting to load an ink ribbon into the ink ribbon holder, check that the ribbon and paper are compatible. If the printer detects an incompatible combination, an error message appears in the printer window display and operation is disabled.
• Use only ink ribbons and paper that are designed for use with this printer. Failing to do so is likely to result in unsatisfactory printing or malfunctions.
• When replacing the ink ribbon, do not turn off the power. Turning off the power will cause the image stored in the memory (also called memory image in this manual) to be lost.

1 Open the front panel by pulling the front panel top toward you.

2 Remove the ink ribbon cartridge by pushing the EJECT button.
The ink ribbon cassette pops out.
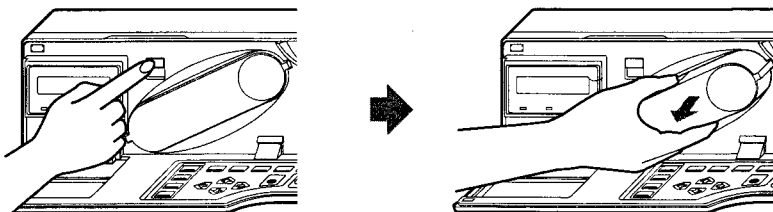
Note

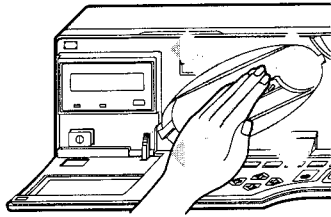Never put your hand into the ink ribbon compartment. The thermal head becomes very hot. You may burn yourself if you touch it.

When the ink ribbon cartridge cannot be ejected

Turn the power off, then back on again. Then, after a while, press the EJECT button.

In this case, the image in memory will be lost.

3 Detach the used ink ribbon from the ink ribbon holder.
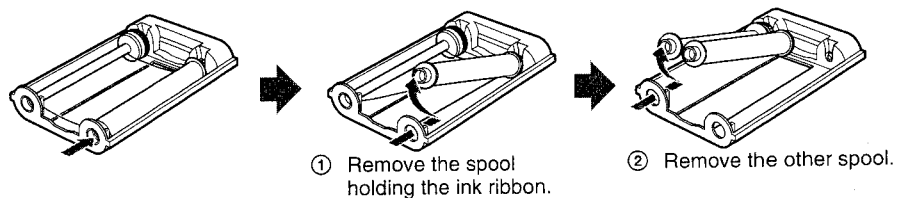
① Remove the spool holding the ink ribbon.　　② Remove the other spool.

4 Load the ink ribbon into the ink ribbon holder.

Sheet

Ink ribbon

Ink ribbon holder

② Pull up and remove the sheet.　　　"START" position marker

① Load the spool holding the ink ribbon into the left-hand part of the holder.

③ Fit the other spool into the right-hand part of the holder.

④ Wind the spools of the ink ribbon as illustrated until a START position marker appears.

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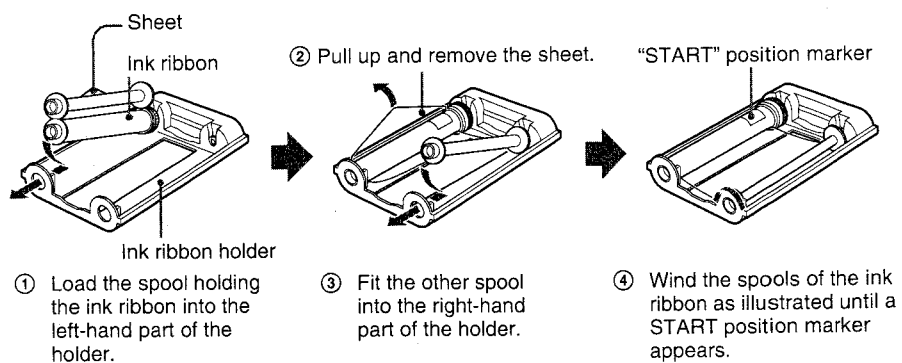
5 Remove any slack from the ink ribbon.
If the ribbon is left slack, it may be damaged when inserted.

"START" position marker

Wind the spool until the
"START" position marker faces
upward.
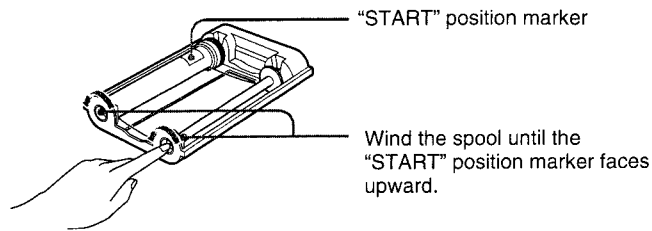
6 Insert the ink ribbon cartridge firmly until it stops.
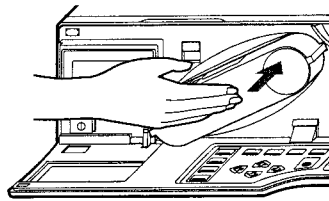
When the ink ribbon cartridge cannot be inserted
Turn the power off, then back on gain. Then, insert the ink ribbon holder.

7 Close the front panel.
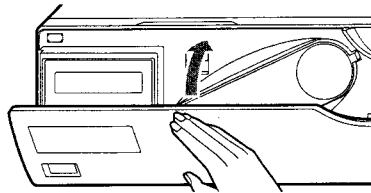
Notes
When using ink ribbons
• Once an ink ribbon has been completely used, replace it. Ink ribbons are not reusable.
• Do not touch the ink ribbon or place it in a dusty location. Finger prints or dust on the ink ribbon will result in imperfect printing or malfunction of the head.
When storing ink ribbons
• Avoid placing the ink ribbon in a location subject to:
  – high temperatures
  – high humidity
  – excessive dust
  – direct sunlight
• Store a partially used ink ribbon in its original packaging.

If your ink ribbon should tear
Repair the tear with transparent tape. There should be no problem with using the remaining portion of the ribbon.

Transparent tape

Turn the spool in the direction of the
arrow to remove any slack until the
transparent tape cannot be seen.
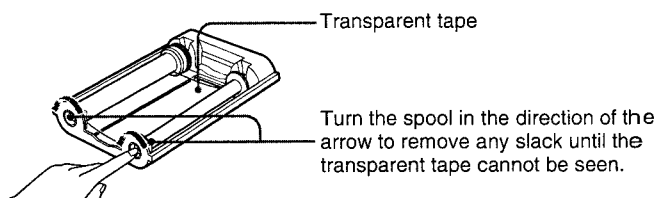
To load paper, follow the procedure below. Be careful not to touch the printing surface.

Notes
- When loading the paper while the printer is operating, do not turn off the power. Turning off the power will cause the image stored in memory to be lost.
- Use only the paper recommended in this manual. Do not use the paper for the existing UP-5000 series. Otherwise, malfunction such as paper jams are likely to occur.

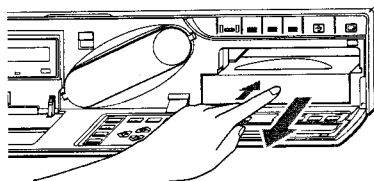**1** Open the front panel by pulling the front panel top towards you.

2 Push in the paper tray.
The paper tray is ejected.

3 Place the print paper in the paper tray.

Notes
- The paper tray holds up to 100 sheets of paper. When adding paper to a partly full tray, be careful that the total number of sheets does not exceed 100. If you exceed this limit, paper jams may occur.
- When adding paper to a partly full tray, remove the printing surface protection sheet (black or blue). Do not place different types of paper in the tray. Doing so may cause paper jams to occur.
- Load the paper so that it lays flat in the paper tray. If the paper is curled, it will overflow from the paper tray and the printing position may shift. If this happens, load fewer sheets in the paper tray.

When using the paper for color printing, place the paper in the paper tray with its printing surface protection sheet facing down.

Printing surface

Printing surface protection sheet

Riffle the paper with the protection sheet.

Set the paper securely under the tab.

Front

When using OHP transparencies, place OHP transparencies as meeting the notched part on the sheet with the mark "w" on the paper tray.
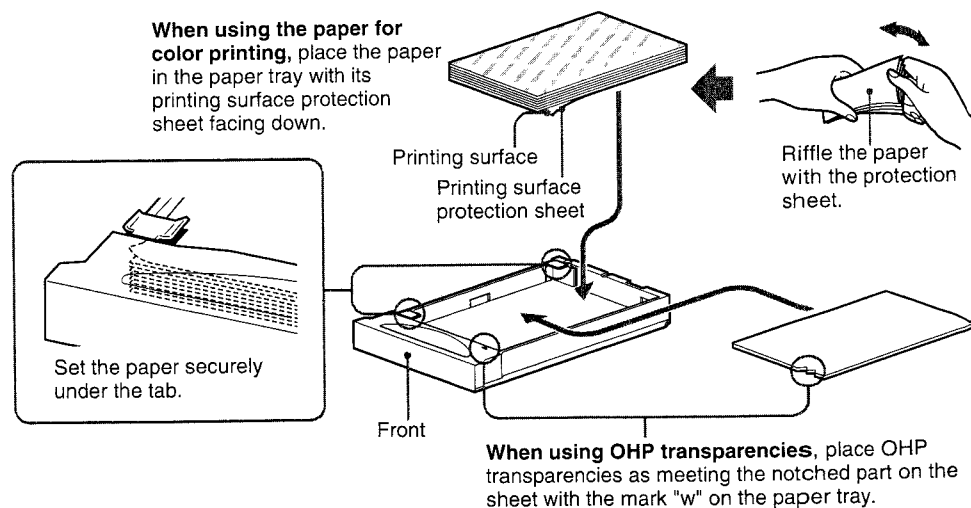
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4 Slide the paper tray back into the printer until it clicks into place.
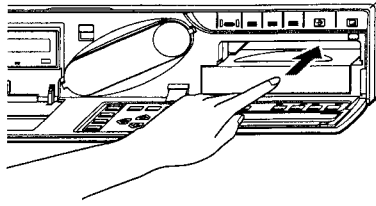
5 Close the front panel.

Notes
When handling the paper and OHP transparencies
Do not touch the printing surface. Dust or finger prints are likely to cause unsatisfactory printing. Hold the paper by the printing surface protection sheet.
When storing print paper
- Avoid storing the print paper in a location subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- Use the original package for storing unused paper.

Selecting the Input Signal

Before printing, select the input signal (the input connector to which the signal to be printed is being input—VIDEO, S-VIDEO, or RGB). Once you have selected the input signal, this setting remains effective until you select another source.

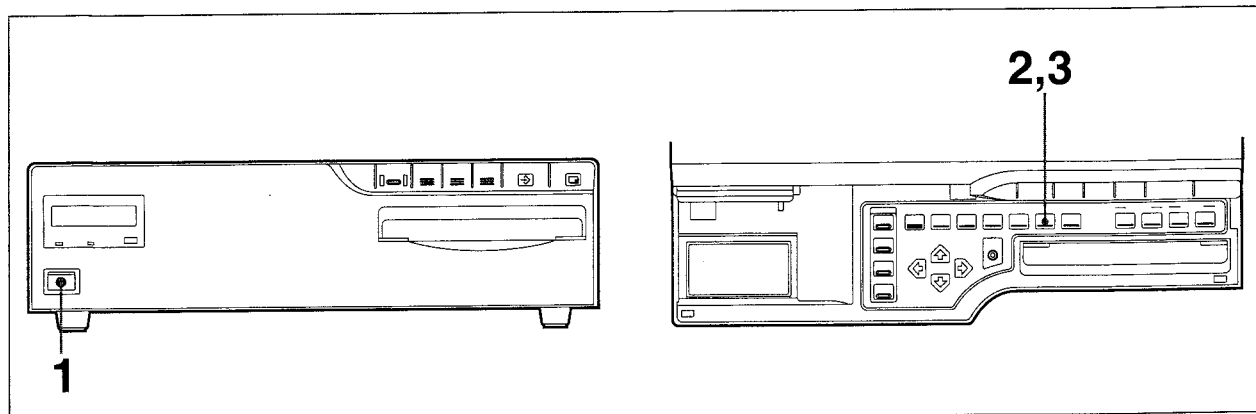**1** Turn on the video monitor and the printer.
The following message appears once the printer is ready to operate.

Video monitor screen

Printer window display

Q1   1/1   A   S
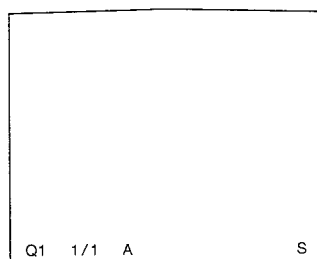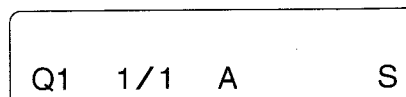
2 Press the INPUT SELECT button.
The currently selected input signal appears.
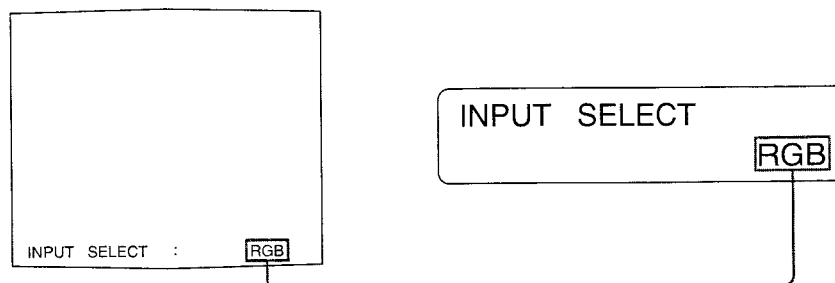
INPUT SELECT
                    RGB

The currently selected input signal appears. After two or three seconds, it disappears.

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3 Press the INPUT SELECT button until the desired input signal appears.
Repeatedly pressing the INPUT SELECT button causes the input signal display
to change in the order of RGB, VIDEO, S-VIDEO, RGB.....
The selected signal will disappear within two or three seconds.

To confirm the currently selected input signal
Press the INPUT SELECT button. The currently selected input signal appears.

Note

If you press the INPUT SELECT button when the memory image (image stored in
the memory) is displayed, the memory image will be replaced with the source
image (image sent from the source equipment).

Making Full-Size Printouts

This section explains how to make a full-size printout. The operations described here constitute the basic procedure for making a printout.

Before making a full-size printout
- All connections should have already been made. (see page 46)
- Ensure that the appropriate ink ribbon/paper set is being used and that they are correctly loaded. (see pages 8, 11 and 82)
- Select the input signal to be used to make a printout. (see page 13)
- Set the printer to store one full-size image into memory. (see page 23)
- Select the appropriate memory page. (see page 24)
- Select the desired user set number. (see page 78)

**1** SOURCE/MEMORY button **3 4**   MOTION CORRECT button

REVIEW button

1 Turn on the video monitor and the printer.
The following screen appears when the printer is ready to operate.
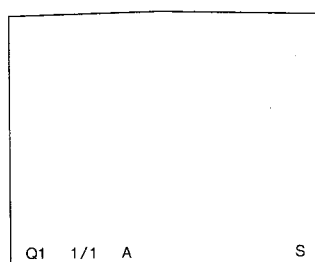
Video monitor screen

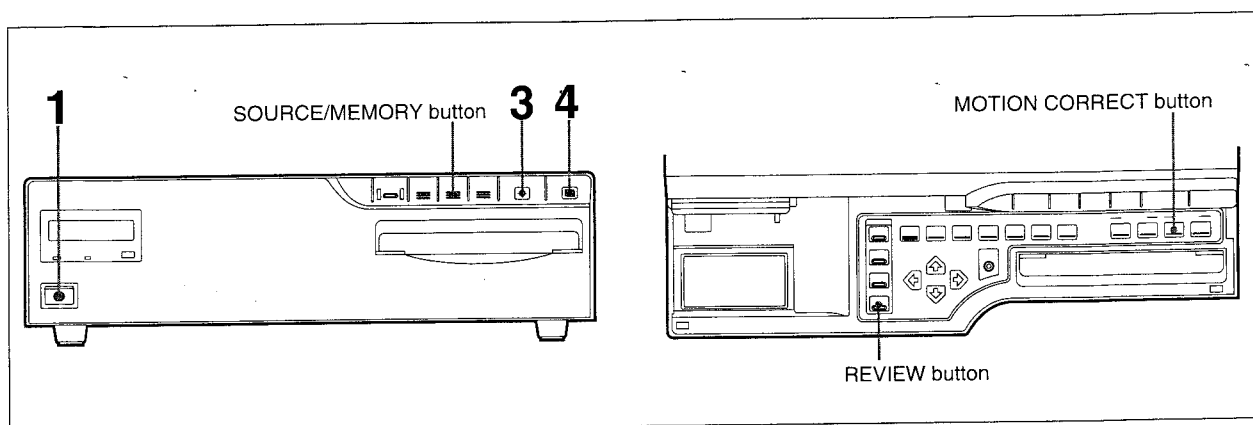Q1   1/1   A   S

Printer window display

Q1   1/1   A   S

2 Start the video source.
This operation is done using the controls of the video equipment acting as the source.

Q1   1/1   A   [S]

Q1   1/1   A   [S]

Shows that the image from the video equipment is displayed on the screen.

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3 Press the CAPTURE button at the instant when the image you want to print appears on the screen.
The image is stored into memory. The memory image is displayed on the screen. Which image appears after this, the source image or memory image, depends on the setting made with the FUNCTION SETUP menu and DISPLAY P IN P button. (page 25).

```
|                          |              ┌─────────────────────────────┐
|                          |              │                             │
|                          |              │  Q1   1/1   A          [M]   │
| Q1   1/1   A       [M]   |              │                             │
|                          |              └─────────────────────────────┘
└──────────────────────────┘                    └──────────────┘
```

Shows that the image stored into memory is
displayed on the monitor.

If the stored image is blurred

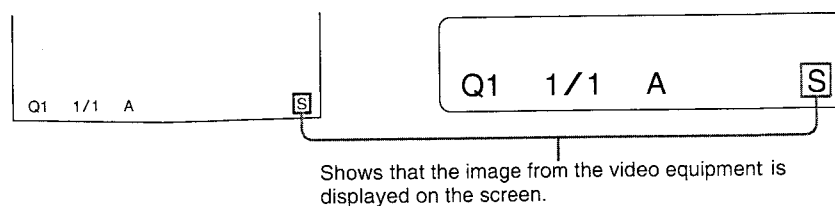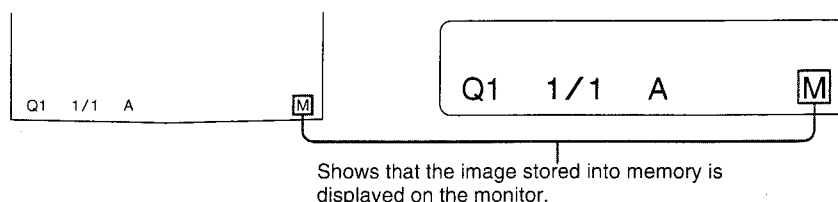A quickly moving image may be blurred when printed. Should this occur, press the MOTION CORRECT button to display MCR on the screen. Note that MCR does not appear in the printer window display. This sets the printer to MOTION CORRECT ON, which should eliminate blur from the printout. Perform printing again. Although the blur should be eliminated, the ultimate print quality will be slightly degraded.

Note

Printing should normally be performed with the printer set to MOTION CORRECT OFF. To confirm the setting, press the MOTION CORRECT button. The currently selected setting is displayed for two or three seconds, after which it disappears. If you do not press the button again while the currently selected setting is displayed, the setting will remain as is. If the setting is not as desired, press the MOTION CORRECT button again to change the MOTION CORRECT mode while the currently selected setting is displayed.
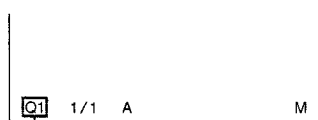
To change the stored image

① To display the source image when the memory image is displayed on the screen, press the SOURCE/MEMORY button .
② Press the CAPTURE button at the instant the image you want to print appears. The previous image is replaced with the new one.

Note

If you turn off the power, the image stored in memory will be lost. Should this happen, store the image into memory again after turning on the power. If no image is stored in memory, the printer will not print even if you press the PRINT button.

4 Press the PRINT button.
It takes about 30 seconds to make a printout.

```
|                          |              ┌─────────────────────────────┐
|                          |              │ │YELLOW  PRINTING│          │
|                          |              │                             │
| [Q1]  1/1  A         M   |              │  Q1   1/1│  A          M     │
└──────────────────────────┘              └─────────────────────────────┘
   └─┘                                          └──┘
```

Blinks while printing.   The color which is currently being printed
Printing start - yellow - pink - cyan - printing end   is displayed. This indication changes as
                                                    printing progresses.

If the printer does not print
The printer will fail to print in the following cases:
- While an error message is displayed on the monitor screen and printer window display. Proceed as described in "Error/Warning Messages" on page 86.
- Image data stored in the memory is lost if you turn off the power. Store the image into memory again, then press the PRINT button.

When you want to see an image that is hidden below a screen message
You can erase the screen message from the video monitor screen by pressing the REVIEW button. The screen message disappears as long as you keep the button hold down.

If a black line appears on the printout
Sometimes, a black line appears on the printout, although it does not appear on the video monitor. This black line can be eliminated from the printout. (see "Changing the Printout Size/Printout Area" page 63)

If the image quality of printouts is not satisfactory
You can adjust the image quality of the printouts. (See "Adjusting the Sharpness and Adjusting the Printout Color" pages 57 and 59)

Notes

When storing your printouts:
- Avoid storing the printout in a location subject to high temperatures, high humidity, excessive dust and direct sunlight.
- Do not stick tape on a printout. Also, avoid leaving a plastic eraser on a printout or placing a printout in contact with materials which contain plasticizer (under a desk mat, for example).
- Do not allow the printed surface of an OHP transparency to press against anything. The ink may come off onto the other surface.
- Do not allow alcohol or other volatile organic solvents to come into contact with the printouts.

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Making Full-Size Printouts (continued)

Making Printouts with the Desired User Set No.

You can register all the printer settings as a user setting. The printer allows you to register three sets of settings as User Set 1, 2 or 3. By selecting a user set , the printer functions according to the corresponding settings. ("Registering a User Set" page 77)
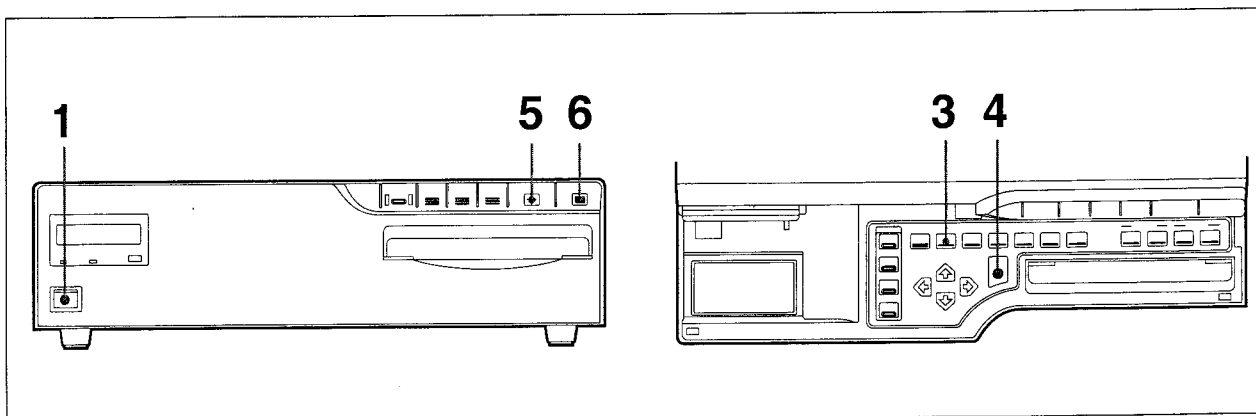
1 Turn on the video monitor and printer.

2 Start the video source.
This operation is done using the controls of the video equipment acting as the source.

3 Select the desired user set by pressing the USER PRESET button.
Repeatedly pressing the USER PRESET button causes the user sets to be recalled in the order of 1, 2, 3 , 1....

4 Press the EXEC button to execute the selected user set.
While the selected user set is being loaded, the following message appears.

```
USER  PRESET-1  LOADING




          Please  wait


```

```
PRESET-1  LOADING
Please  wait
```
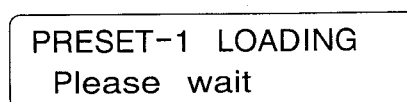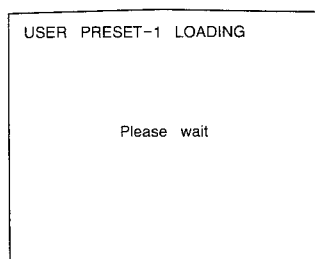
Note
If the user set is changed, the image stored in memory page will be cleared.

5 Press the CAPTURE button at the instant the image you want to print appears on the screen.
That image is stored into memory.

6 Press the PRINT button.
The printer make printouts according to the user set selected in step **3**.

You can print up to 9 copies of a memory image.
The following steps can be performed either before you start printing or while printing. You can change the designated number of copies any time during printing.
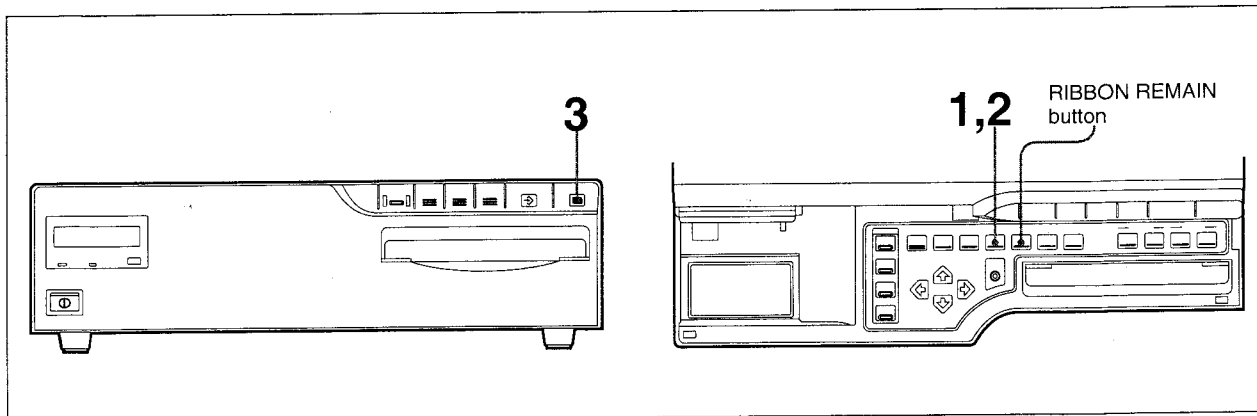
1 Press the PRINT QTY button.
If you do not perform any operation after you press the PRINT QTY button, the currently set number of copies appears for 2 or 3 seconds, after which it disappears.

Video monitor screen

PRINT QUANTITY : 1
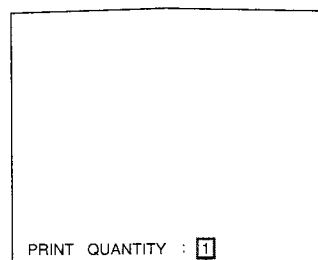
Printer window display
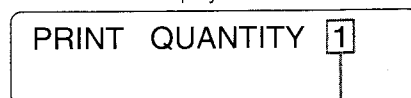
PRINT QUANTITY 1

The currently set number of copies appears within a couple of seconds.

2 Press the PRINT QTY button until the desired number appears.
Repeatedly pressing the PRINT QTY button increases the quantity up to 9, after which the number returns to 1.
Pressing the ⇦ or ⇨ button while the message PRINT QUANTITY appears decreases or increases the quantity. By pressing ⇦ and ⇨ button at the same time, the quantity is reset to 1.

PRINT QUANTITY : 5
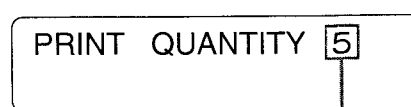
PRINT QUANTITY 5

The video monitor screen is reset to the regular screen within a couple of seconds.
Press the PRINT QTY button as many times as necessary until the desired quantity appears.

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3 Press the PRINT button.

The remaining quantity appears.
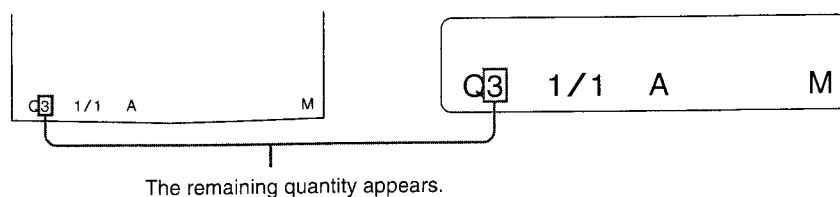
You can change the quantity to be printed by pressing the PRINT QTY button during printing. In such a case, after completing printing, the quantity is reset to the number set in step **2**.

If the paper runs out during printing
Load the paper into the paper tray and press the PRINT button. The printer prints the remaining copies.

To check the amount of ink ribbon remaining
Press the RIBBON REMAIN button. The type of the ink ribbon and the number of printouts that can still be made with the ink ribbon are displayed. To clear the display, press the RIBBON REMAIN button again.

Type of ink ribbon
When OHP transparencies are being used, the message "OHP: nnn" appears.
When the ink ribbon runs out or is not loaded, the message "NO RIBBON" appears.

Number of printouts that can still be made with the ribbon
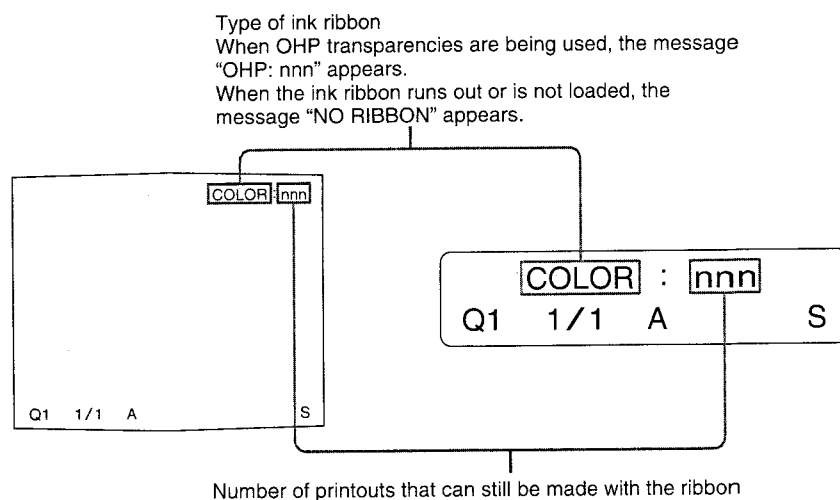
Storing Another Image While Printing an Image

While the printer is operating, you can store another image into another memory page to be printed once the printer becomes free. The usable memory pages depend on the type of printouts and settings. ("Selecting the memory page" page 24)
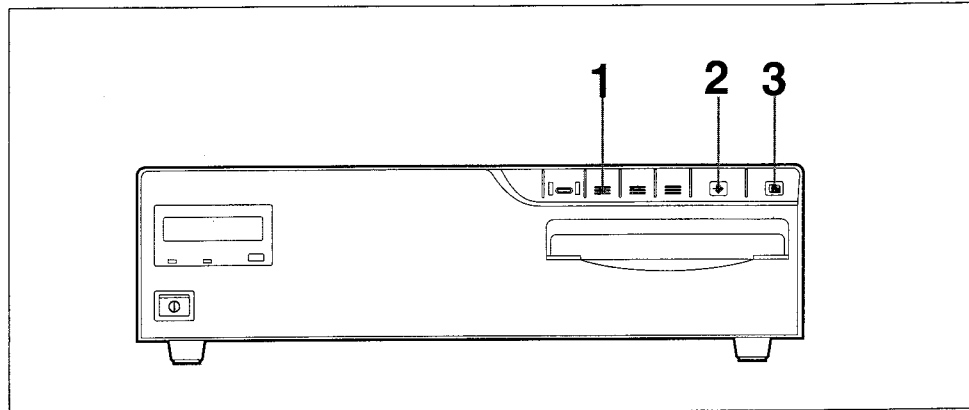
1 Select the desired memory page by pressing the MEMORY PAGE button. Pressing the MEMORY PAGE button switches the memory page.

Q1   1/1   B   S
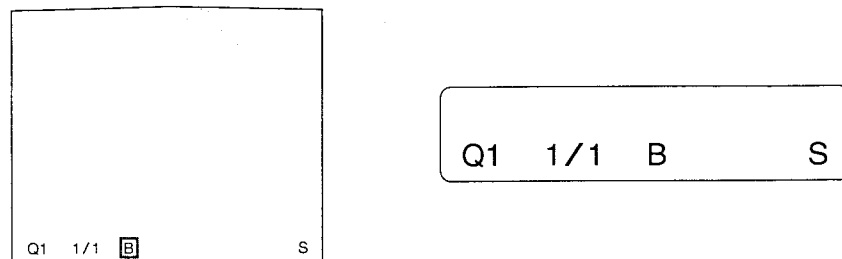
The available memory pages appear in white.

2 Press the CAPTURE button at the instant the image you want to print appears on the screen.

3 Press the PRINT button.
The image stored in step **2** is queued. The image is printed as soon as all previous printing jobs have been completed.

Q1   1/1   ⃞B   M

Q1   1/1   ⃞B   M
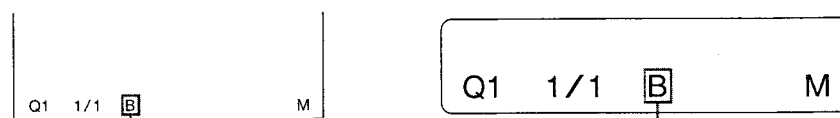
Memory page whose image has been queued for printing (lights in green on the video monitor).
The memory page display returns to white on the video monitor once printing has been completed.

Note
Another image cannot be stored into a memory page into which an image has already been queued for printing.

4 To queue another memory page, repeat steps **1**, **2** and **3**.

Making Variations of Printouts

You can store various kinds of images into memory and can vary the printout of the stored images by changing the print mode.

Types of printouts that the printer can produce

The following types of printout of the images stored in memory can be made.
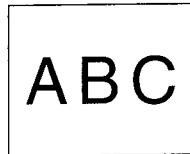
Printout of a full-size printout
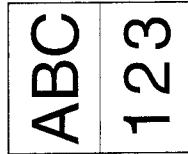
Printout of two reduced images
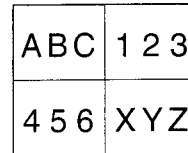
Printout of four reduced images
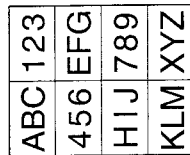
Printout of eight reduced images
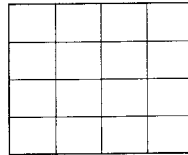
Printout of 16 reduced images
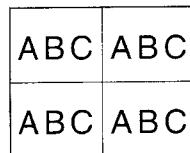
Printout of identical images
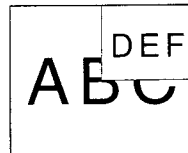
Printout with an insert

You can store multiple images into a memory page and print them, each reduced as necessary such that 2, 4, 8 or 16 images appear on a single printout. This section explains how to make a printout with multiple reduced images.

A printout having multiple reduced images is done by following the procedure below.

① Determining the number of reduced images. (page 23)
② Selecting the memory page (page 24)
③ Selecting how to store the images into memory (page 25)
④ Confirming the user setting (page 77)
⑤ Printing the multiple reduced images stored in the memory page (page 27)

Selecting the number of reduced images to be stored in memory
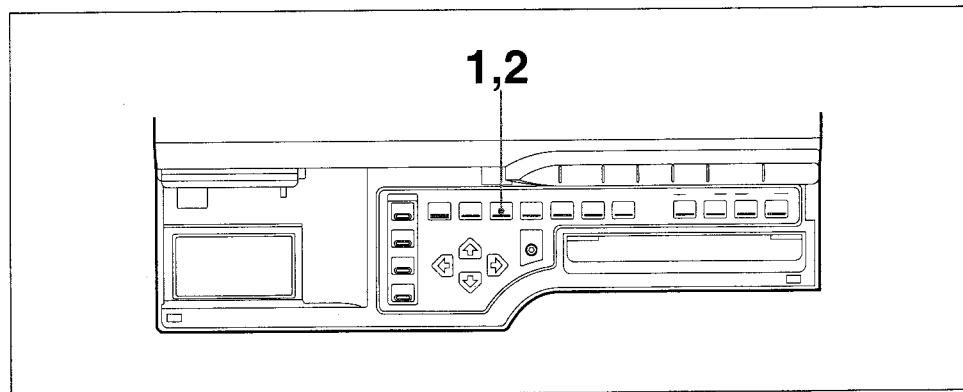
1 Press the MULTI PICTURE button.
The current setting appears. The video monitor screen is reset to the regular screen after a few seconds.

Video monitor screen
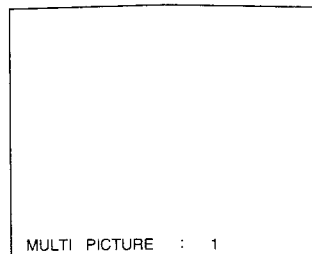
MULTI PICTURE : 1

Printer window display

MULTI PICTURE   1

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2 Press the MULTI PICTURE button until the desired multiple image type appears.

Repeatedly pressing the MULTI PICTURE button switches the type of reduced image printout.

Displayed type	Number of reduced images
1	1 (Full-size image)
2	2 (Two reduced images)
4	4 (Four reduced images)
8	8 (Eight reduced images)
16	16 (16 reduced images)

After a few seconds, the video monitor screen is reset to the regular screen.

Selecting the memory page

To make a printout, it is first necessary to store the desired image into a memory page in the printer. The usable memory page depends on the type of the image to be stored.

Type of image to be stored	Usable memory page	
	Standard specifications	Printer fitted with UPK-5500 expansion memory board (not supplied)
Full-size image	A, B, C, D	A, B, C, D, E, F, G, H
Two reduced images	A, B	A, B, C, D
Four reduced images	A	A, B
Eight reduced images	A, B	A, B, C, D
16 reduced images	A	A, B

To select the memory page

MEMORY PAGE button

Press the MEMORY PAGE button.

Q1 1/1 [C] S

Q1 1/1 [C] S
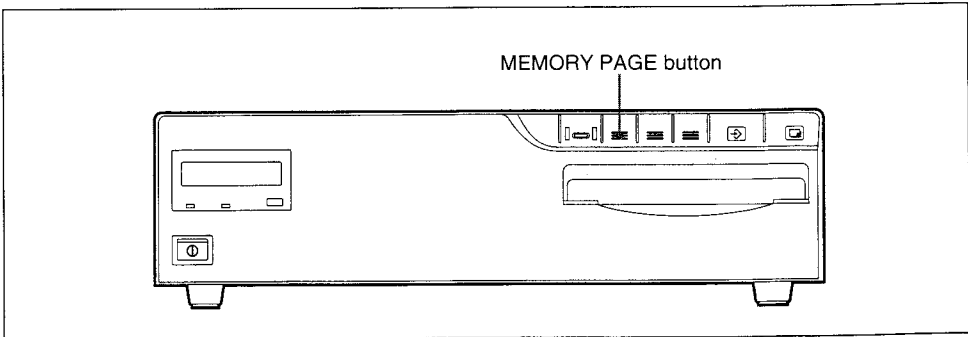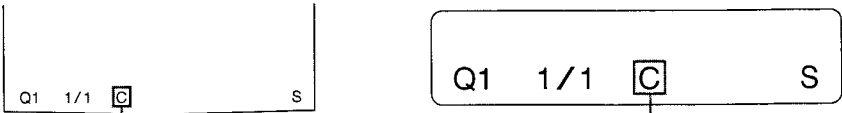
Repeatedly press the MEMORY PAGE button until the desired memory page appears.

Selecting how to store the image

You can select how to store the image by using the FUNCTION-SETUP menu and DISPLAY P IN P button on the sub panel.
- Storing only the image currently displayed on the video monitor screen or storing images sequentially to all memory pages at regular intervals.
- Deciding the image the printer displays on the video monitor screen after storing the image.
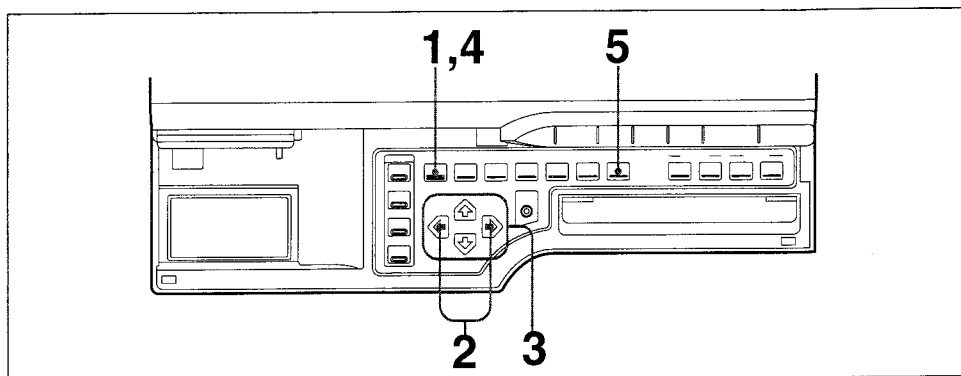
1 Press the MENU button.
The following screen appears.

Video monitor screen

```
MENU
▶ SYSTEM-SETUP/PRN/FUNC
  DISPLAY     : ON/OFF
  BEEP        : ON/OFF
  LCD         : ON/OFF
  LCD-CNTR    :   0   ·······|·······
  BAUDRATE    : 12/24/48/9600
  MONITOR     : THRU/EE
  USER  SET   : 1/2/3  [EXEC]


  Q1   1/4   A                    M
```

Printer window display

```
SYSTEM  SETUP
  SYSTEM/PRN/FUNC
```

2 Select FUNCTION-SETUP with the ⇦ or ⇨ button.

```
MENU
▶ SYS/PRN/FUNCTION-SETUP
  REMOTE2   :    C&PRINT   >
  REMOTE3A  :    PRINT     >
  REMOTE3B  : <  BACK-SP   >
  REMOTE3C  : <  CAP/SRC   >
```

Press the ⇦ or ⇨ button until FUNCTION-SETUP appears.

```
FUNCTION  SETUP
  SYS/PRN/FUNCTION
```

Press the ⇦ or ⇨ button until FUNCTION appears.

3 Set the method used to store images into memory.
① Select the item to be set by pressing the ⇧ or ⇩ button.
② Select the method for storing images by pressing the ⇦ or ⇨ button.

```
▶ CAPTURE   : SINGLE/SERIES
  TIMER     : ON/OFF



  Q1   1/4   A              M
```

Select the desired mode (such that it appears in green) by pressing the ⇦ or ⇨ button.

```
CAPTURE    :
            SINGLE/series
```

Press the ⇦ or ⇨ button until the desired mode appears in capital letters.

Continue to next page →

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Making Variations of Printouts (continued)

When you select	Item to be set	Settings	Contents of settings
To decide whether the printer automatically stores images into memory page at regular intervals	CAPTURE	SINGLE	Storing only the image currently displayed on the video monitor screen by pressing the CAPTURE button.
		SERIES	Storing images sequentially to all memory pages at regular intervals by pressing the CAPTURE button.
To decide which image appears on the video monitor screen after the printer stores the image into memory. *	TIMER	ON	The image stored in memory appears just after the printer stores the image, then after a few seconds, the source memory appears, whenever you press the CAPTURE button.
		OFF	The image stored in memory appears just after the printer stores the image, and the memory image remains on the video monitor screen.

* The image to be displayed on the video monitor screen also depends on the setting of the DISPLAY P IN P button.

4 Press the MENU button.
The regular screen appears.

5 Decide the image to be displayed after the CAPTURE button has been pressed by pressing the DISPLAY P IN P button.
When you press the DISPLAY P IN P button, the setting currently selected appears for a few seconds. Whenever you press the DISPLAY P IN P button, the setting is switched in order of ON, OFF, ON...

		Setting of TIMER (set in step 3)	
		ON	OFF
Setting of DISPLAY P IN P	ON	The image stored in memory appears. Then, the source image* appears at the position where the image will be stored next, in the case of a multiple-reduced image. This mode allows you to visualize the appearance of the printout. The source image is displayed at a part of the memory image in case of a full-size image.	The image stored in memory appears. When multiple reduced images are stored, the source image appears at the position into which the image will be stored next.
	OFF	The image stored in memory appears. Then, after about three seconds, the memory image is replaced with the source image.	The memory image remains on the video monitor screen.

* The source image, which is displayed at a part of the memory image, may be distorted. However, even if this distored source is captured in memory, the image in memory is not distorted.

Making a Printout with Multiple Images

This subsection explains how to make printouts of multiple reduced images taking, as an example, the making of a printout of four reduced images.

Before making the printout of four reduced images
- Select the type of the four-reduced image. (see page 23)
- Select the appropriate memory page. (see page 24)
- Set how to store images into the memory page and select which image will appear after the image has been stored into memory, the memory image or source image. (see page 25)
- Select whether white borders are to be added. (see page 30)
- Confirm the user set. (see page 77)
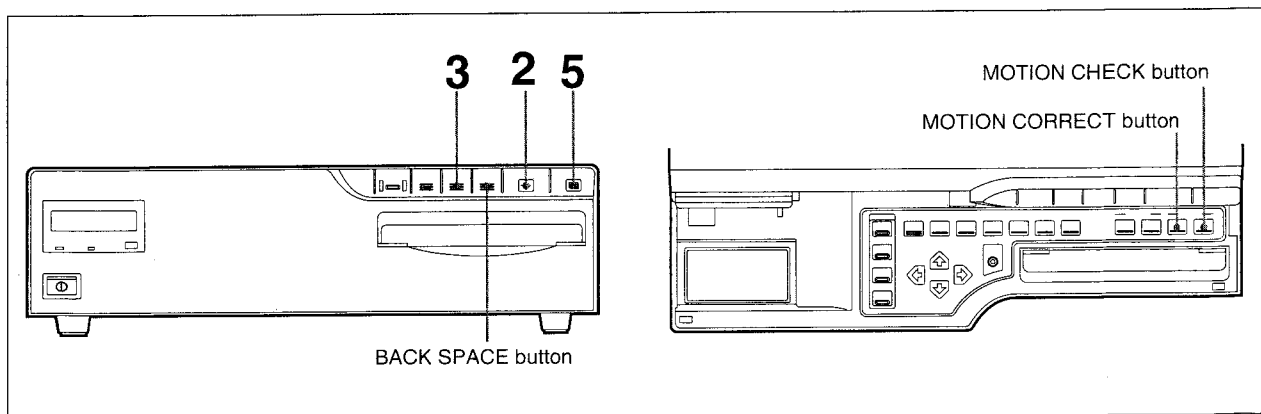
3 2 5

MOTION CHECK button

MOTION CORRECT button

BACK SPACE button

1 Start the video source.
This operation is done using the controls of the video equipment acting as the source.

Blinks, in green, to indicate that an image will be stored here.

The memory page into which four reduced images are stored

Position to which the image is to be stored next.

Q1 1/4 A S

Type of multiple reduced images

Shows that the images from the video equipment is displayed on the screen.

MC-Service
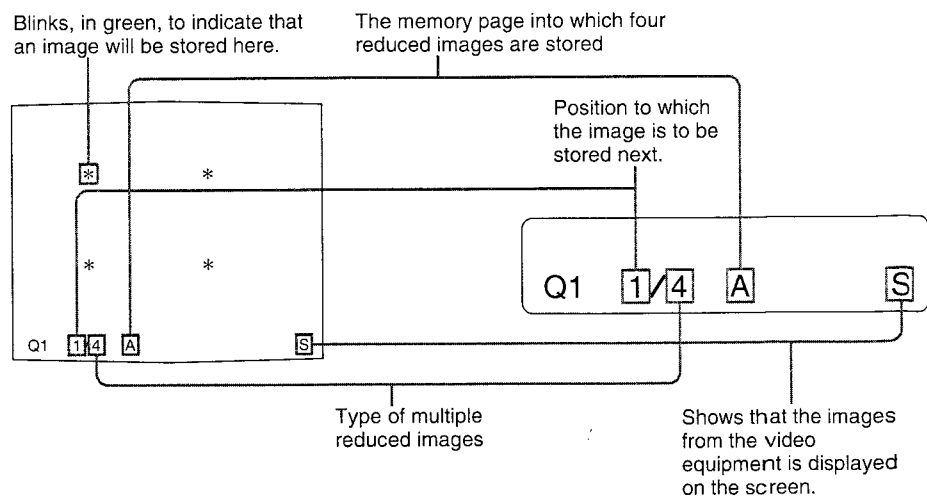
2 Press the CAPTURE button at the instant the image you want to print appears on the screen.

The image has been stored to the star (*) that blinked in green on the video monitor screen or the position number displayed on the printer window display in step **1**.

The green blinking star (referred to as the cursor) on the monitor moves to the next position and the number the printer window display advances by 1.

Q1   2/4   A   M
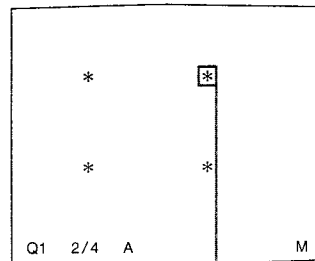
The blinking green cursor moves.

Q1   2/4   A   M
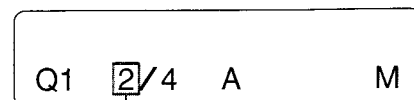
The number changes.

At this time, the image stored in memory is displayed on the video monitor screen. However, the image to be displayed after a few seconds depends on the setting of TIMER in the FUNCTION-SETUP menu and the setting of the DISPLAY P IN P button (see page 25)

Go to step **3** when the memory image remains on the video monitor screen.
Go to step **4** when the source image is displayed at the position where the next image is to be stored.

3 Press the SOURCE/MEMORY button.
The source image appears on the video monitor screen.

4 Repeat steps **2** and **3** until you have stored four images when the memory image remains on the video monitor screen.
Repeat step **2** until you have stored four images when the source image appears on the video monitor screen.

To replace a stored image
Example: When you want to change the image stored to the third position.

① Select the third position where there is the image which you want to replace by pressing the ⇦ or ⇨ button.
Pressing the ⇦ or ⇨ button moves the cursor one position.

Q1   3/4   A   M
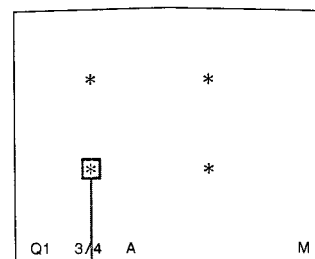
Press the ⇦ or ⇨ button until the thrid cursor blinks.

Q1   3/4   A   M
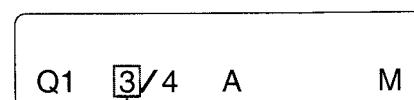
Display 3 by pressing the ⇦ or ⇨ button.

To move the blinking cursor back one position at a time
Press the BACK SPACE button. Each time you press the BACK SPACE button, the cursor moves back one position.

② Start the video source.
③ Press the CAPTURE button at the instant the image you want to print appears.
The previously stored image is replaced with the newly stored image.

To skip a previously stored image
When an image has already been stored, the previously stored image can be replaced by pressing the CAPTURE button.
Skip the corresponding image by pressing the ⇦ or ⇨ button.

To capture images automatically
Images can be stored in all of the memory pages according to setting made for CAPTURE of the FUNCTION-SETUP menu. (see page 26)
While images are being captured, the message PLEASE WAIT appears on the video monitor screen.

If the memory image is blurred
Press the MOTION CORRECT button such that MOTION CORRECT ON appears. The blur will be eliminated, but the ultimate printout quality will be slightly degraded.

```
 ┌─────────────────────┐
 │                     │
 │                     │
 │     *         *     │
 │                     │
 │                     │
 │     *         *     │
 │                     │
 │                     │
 │ MOTION CORRECT : ON │
 └─────────────────────┘
```

```
┌─────────────────────────┐
│ MOTION  CORRECT          │
│                      ON  │
└─────────────────────────┘
```
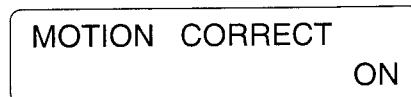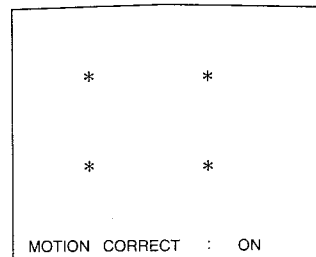
Printouts are usually made with the printer set to MOTION CORRECT OFF.
To confirm the setting, press the MOTION CORRECT button. The current setting is displayed for a few seconds, then disappears.

For two and four reduced images
When two or four reduced images are being stored in memory, blur may not appear on the screen. However, when you make a printout of these multiple reduced images, the printout may appear blurred. In such a case, you can check whether the image stored in memory is quickly moving image by pressing the MOTION CHECK button before you make a printout.

5 Press the PRINT button.
The four reduced images are printed on one sheet of paper.
Whether images are printed with white borders depends on the setting of SEPARATE of the PRINT-SETUP menu. (next page)

Making Variations of Printouts (continued)

Making printouts with white borders

The PRINT-SETUP menu allows you to decide whether the images are printed with or without white borders.
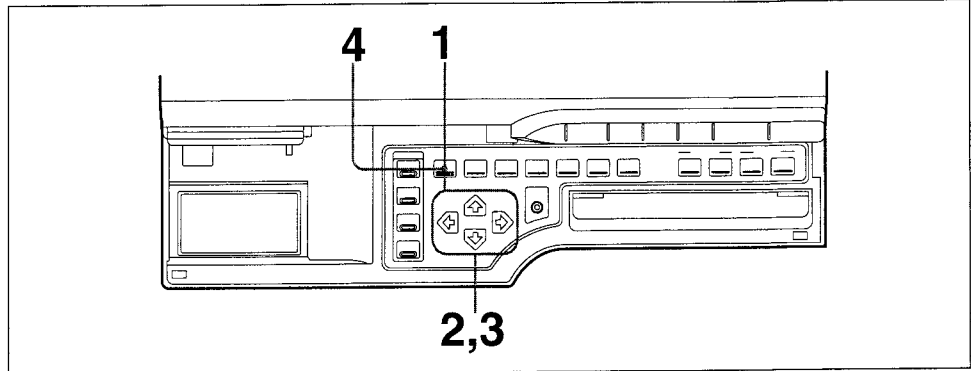
1 Press the MENU button, then select PRINT-SETUP on the displayed menu by pressing the ◁ or ▷ button.

```
MENU
► SYS/PRINT-SETUP/FUNC
  ASPECT     : PRESS [EXEC]
  SEPARATE   : ON/OFF
  DUP IMAGE  : ON/OFF
  SHARPNESS  :   0 *-------



  Q1  1/4  A                 S
```

Press the ◁ or ▷ button until PRINT-SETUP appears.

```
PRINT  SETUP
  SYS/ PRINT / FUNC
```
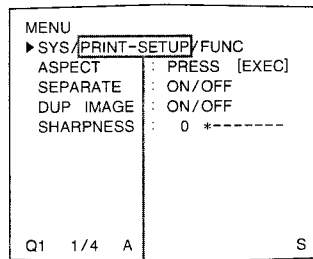
Press the ◁ or ▷ button until PRINT appears.

2 Select SEPARATE by pressing the ⇧ or ⇩ button.

```
MENU
  SYS/PRINT-SETUP/FUNC
  ASPECT     : PRESS [EXEC]
► SEPARATE   : ON/OFF
  DUP IMAGE  : ON/OFF
```
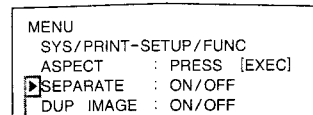
Position the cursor to SEPARATE by pressing the ⇧ or ⇩ button.

```
SEPARATE :
               ON/ off
```
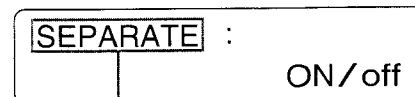
Press the ⇧ or ⇩ button until SEPARATE appears.

3 Select whether the images are printed with or without white borders by pressing the ◁ or ▷ button.

When you select	Settings
Printouts without white borders	OFF
Printouts with white borders	ON

```
MENU
  SYS/PRINT-SETUP/FUNC
  ASPECT     : PRESS [EXEC]
► SEPARATE   : ON/OFF
  DUP IMAGE  : ON/OFF
```
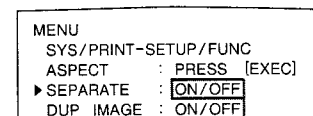
Switch the desired mode to green by pressing the ◁ or ▷ button.

```
SEPARATE :
               ON/ off
```
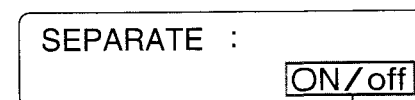
Display the desired mode in capital letters by pressing the ◁ or ▷ button.

4 Press the MENU button.
The regular screen appears.

You can use the same image for all reduced images. This is convenient for making identification photographs, for example.

Before making printouts of ientical reduced images

• Set the type of multiple reduced images according to how many copies you want to make. (see page 23)
• Select the appropriate memory page. (see page 24)
• Select whether white borders are to be added. (see page 30)
• Confirm the user set. (see page 77)
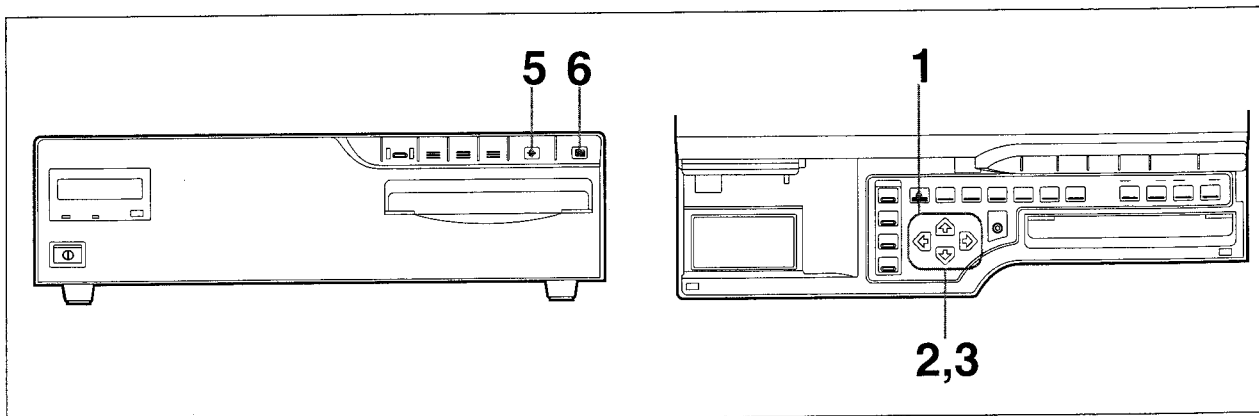
1 Press the MENU button, then select PRINT-SETUP on the displayed menu by pressing the ⇦ or ⇨ button.

```
MENU
▶ SYS /[PRINT-SETUP]/ FUNC
  ASPECT      :  PRESS  [EXEC]
  SEPARATE    :  ON/OFF
  DUP IMAGE   :  ON/OFF
  SHARPNESS   :    0  *-------


  Q1   1/4   A                  S
```

Press the ⇦ or ⇨ button until PRINT-SETUP appears.

```
PRINT  SETUP
  SYS /[PRINT]/ FUNC
```

Press the ⇦ or ⇨ button until PRINT appears.

MC-Service
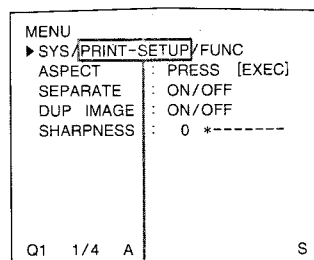
2 Select DUP IMAGE by pressing the ⇧ or ⇩ button.

```
MENU
    SYS/PRINT-SETUP/FUNC
    ASPECT      : PRESS  [EXEC]
    SEPARATE    : ON/OFF
 ▶DUP  IMAGE    : ON/OFF
```

Position the cursor to DUP IMAGE
by pressing the ⇧ or ⇩ button.

```
DUP  IMAGE  :
                    on/OFF
```

Press the ⇧ or ⇩ button until DUP IMAGE
appears.

3 Select ON by pressing the ⇦ or ⇨ button.

```
MENU
    SYS/PRINT-SETUP/FUNC
    ASPECT      : PRESS  [EXEC]
    SEPARATE    : ON/OFF
 ▶DUP  IMAGE    : ON/OFF
```

Switch ON to green by pressing
the ⇦ or ⇨ button.

```
DUP   IMAGE   :
                    ON/off
```

Press the ⇦ or ⇨ button until ON appears in
capital letters.

4 Start the video source.
This operation is done using the controls of the video equipment acting as the source.

```
Q1   1/4   A  DUP          S
```

Appears when DUP IMAGE is set
to ON.

5 Press the CAPTURE button at the instant the image you want to print appears on the screen.
The same image will be used for reduced images.

To replace a stored image
① Start the video source.
② Press the CAPTURE button at the instant the image you want to print appears.
   The previously stored image is replaced with the newly stored image. The newly stored image is copied to each reduced image.

6 Press the PRINT button.
Multiple reduced copies of the same image are printed on a single sheet.

You can make printouts with an insert for the eight- or 16-reduced image printout type. The position and size of the reduced image to be inserted are those for four reduced images.
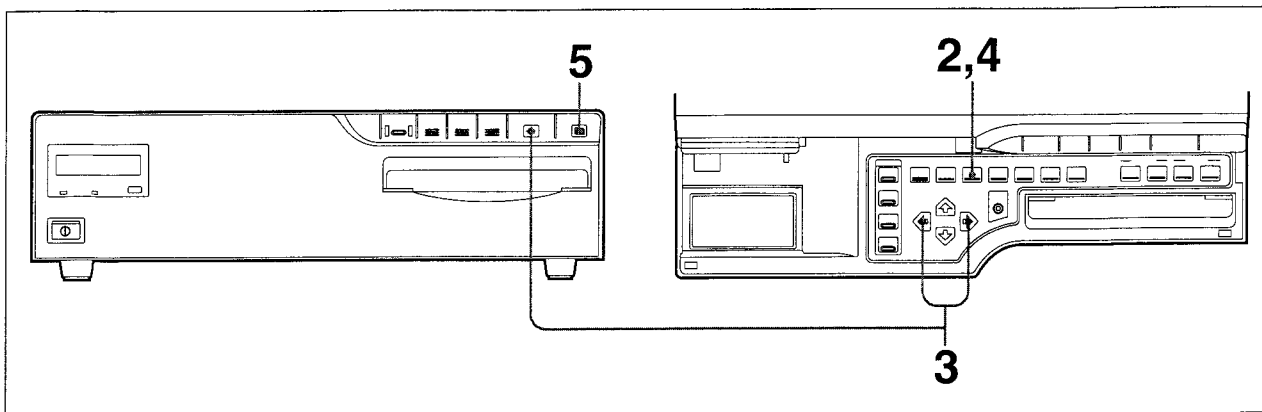
1 Display the full-size image stored in memory. (Follow steps **1** to **3** of "Making Full-Size Printouts" on page 15.)

2 Set the multiple reduced image type to 8 or 16 (without white borders) by pressing the MULTI PICTURE button. ("Selecting the number of reduced images to be stored in memory" page 23 and "Making printouts with white borders" page 30)

3 Store the image to be inserted.
① Select the position where a reduced image is to be inserted by pressing the ⇦ or ⇨ button.
Example: To insert the image in the lower-left position

When you select 8 in step 2   When you select 16 in step 2
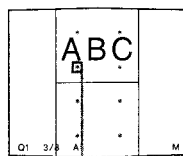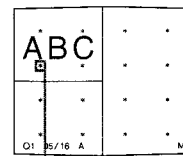
Position the cursor (blinking) to this position by pressing the ⇦ or ⇨ button .

Image which appears after the CAPTURE button has been pressed.

Position the cursor (blinking) to this position by pressing the ⇦ or ⇨ button.
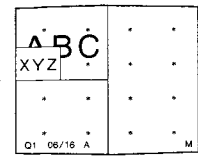
Image which appears after the CAPTURE button has been pressed.

② Press the CAPTURE button at the instant the image you want to insert appears.
The image is stored to the position selected in step ①.

4 Press the MULTI PICTURE button.
The full-size image with an insert appears on the video monitor.

5 Press the PRINT button.
The image with an insert is printed.

MC-Service

A caption, such as data or comments, can be added to a printout below the image. You can input up to 80 characters. When using the computer via the RS-232C interface, you can input up to 160 characters on two lines from the computer.

About the CAPTION menu

A caption is entered from the CAPTION menu. A brief explanation of each item of the CAPTION menu is given below.

Character display area
Lights in green when ON is displayed. Lights in white when OFF is displayed.
The blinking cursor ■ indicates the position where a character can be entered.
ON: displayed when printing with a caption
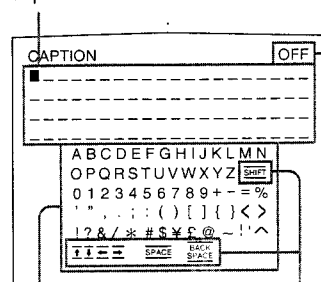
OFF: displayed when printing without a caption (OFF is displayed as the factory-setting)

CAPTION INPUT
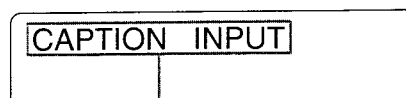
Character entry area
The character or symbol where the cursor is placed is displayed in green.

Symbols and words can be used to enter a caption.

While entering a caption, the above message appears in the printer window display.

Symbols and words can be used to enter a caption

Monitor display	Function
SPACE	One space
BACK SPACE	One backspace
SHIFT*	Selecting either capital letters or lower-case letters

* By highlighting SHIFT in green and pressing the EXEC button, capital letters are changed to lower-case letters, or lower-case letters are changed to capital letters.

Enter a caption as follows. The setting remains effective until you enter a new setting - even if you turn the power off.
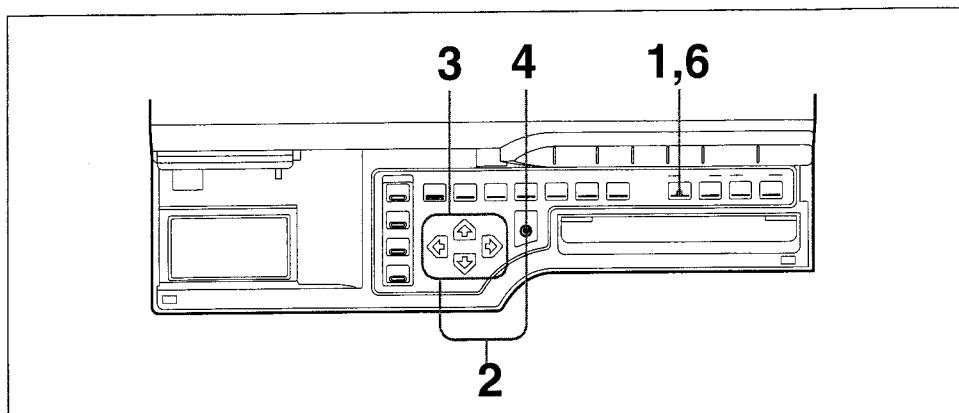
1 Press the CAPTION INPUT button.
The right screen appears.

CAPTION input-menu

```
CAPTION                    OFF
_ _ ■ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  A B C D E F G H I J K L M N
  O P Q R S T U V W X Y Z SHIFT
  0 1 2 3 4 5 6 7 8 9 + - = %
  ' " , . ; : ( ) [ ] { } < >
  ! ? & / * # $ ¥ £ @ ~ ! ' ^
  ↑↓⇐⇒  SPACE  BACK
              SPACE
```
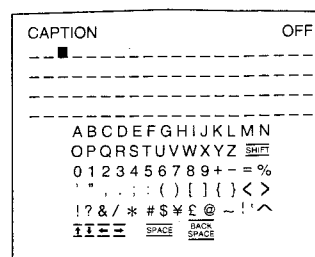
2 Position the cursor to the point where you want to enter the character in the character display area.

To move the cursor:
① Select the arrow corresponding to the direction in which you want to move the green cursor ■ in the character display area by pressing the ⇧ , ⇩ ⇐ or ⇒ button.
② Press the EXEC button.
Each time you press the EXEC button, the cursor ■ moves one position in the designated direction.

Note
When the character display area is displayed in white, the CAPTION input mode is set to OFF. Thus, you cannot add a caption to the printouts. ("Making printouts with a caption" on page 37)

Example: To move the cursor to the left by two positions.

```
CAPTION                    OFF
_ _ ■ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  A B C D E F G H I J K L M N
  O P Q R S T U V W X Y Z SHIFT
  0 1 2 3 4 5 6 7 8 9 + - = %
  ' " , . ; : ( ) [ ] { } < >
  ! ? & / * # $ ¥ £ @ ~ ! ' ^
  ↑↓⇐⇒  SPACE  BACK
              SPACE
```
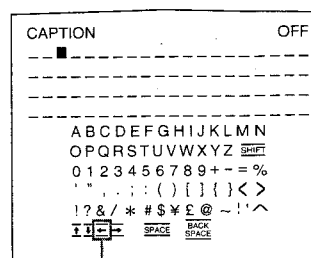
Highlight the arrow, corresponding to the desired direction, in green by pressing the ⇧ ,⇩ ⇐ or ⇒ button.

Press the EXEC button twice.

```
CAPTION                    OFF
■ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
  A B C D E F G H I J K L M N
  O P Q R S T U V W X Y Z SHIFT
  0 1 2 3 4 5 6 7 8 9 + - = %
  ' " , . ; : ( ) [ ] { } < >
  ! ? & / * # $ ¥ £ @ ~ ! ' ^
  ↑↓⇐⇒  SPACE  BACK
              SPACE
```
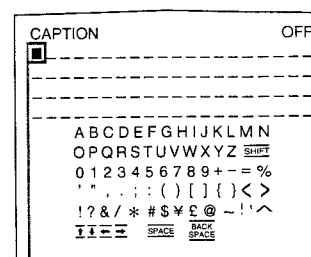
The cursor moves here.

3 Select the character you want to enter by pressing the ⬆ ,⬇ ⬅ or ➡ button.

Example: To select S.

```
CAPTION                    OFF
■ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
    A B C D E F G H I J K L M N
    O P Q R S T U V W X Y Z SHIFT
    0 1 2 3 4 5 6 7 8 9 + - = %
    ' " , . : ; ( ) [ ] { } < >
    ! ? & / * # $ ¥ £ @ ~ ! ' ^
    ⇅ ⇅ ⇄ ⇄   SPACE   BACK SPACE
```
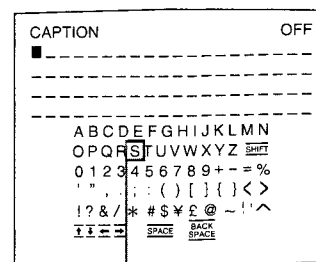
Highlight S in green by pressing the ⬆ ,⬇ ⬅ or ➡ button.

4 Press the EXEC button.
The character selected in step 3 appears at the point to which the green cursor ■ is positioned in the character display area, after which the cursor ■ moves to the next position.

```
CAPTION                    OFF
S ■ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
    A B C D E F G H I J K L M N
    O P Q R S T U V W X Y Z SHIFT
    0 1 2 3 4 5 6 7 8 9 + - = %
    ' " , . : ; ( ) [ ] { } < >
    ! ? & / * # $ ¥ £ @ ~ ! ' ^
    ⇅ ⇅ ⇄ ⇄   SPACE   BACK SPACE
```
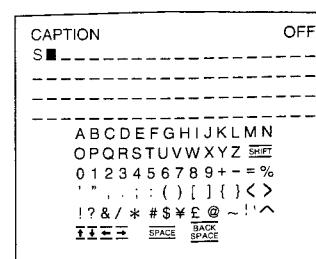
When you enter the wrong character
Select BACK SPACE by pressing the ⬆ ,⬇ , ⬅ or ➡ buttons, then press the EXEC button. The character to the left of highlighted character will be deleted. Whenever you press the EXEC button, the cursor moves back deleting the highlighted letters, one by one.

5 Repeat steps **2**, **3** and **4** to enter the remaining characters of the caption.

To enter a space
① Position the green cursor ■ to the point where you want to enter a space.
② Select SPACE by pressing the ⬆ ,⬇ , ⬅ or ➡ button.
③ Press the EXEC button.
A single space is entered and the green cursor ■ moves to the next position.

To replace a previously entered character without changing the number of characters
You can replace a previously entered character with a new one.
① Position the green cursor ■ to the character to be replaced by performing the operations explained in step **2**.
② Overwrite the invalid character with the correct character by performing the operations explained in steps **3** and **4**.
The previously entered character is replaced with the new one.

6 Press the CAPTION INPUT button.
The regular screen appears.

Making printouts with a caption
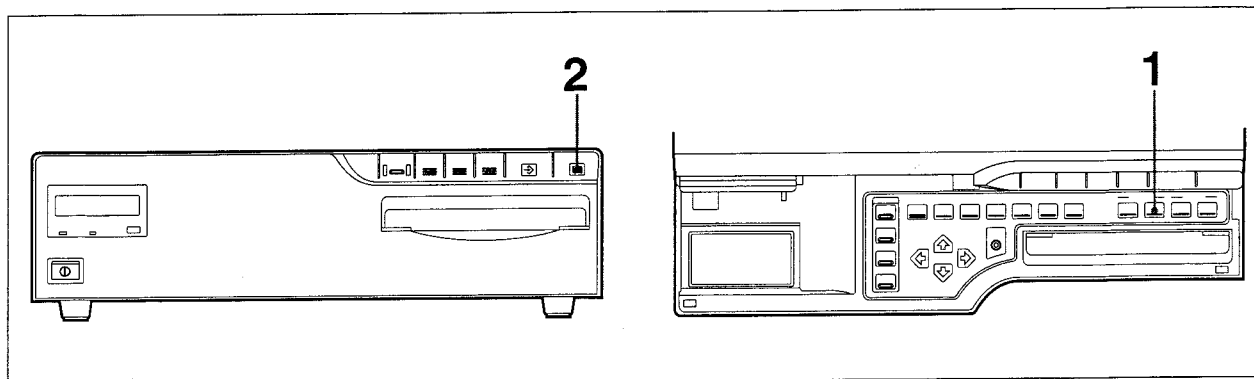
1 Press the CAPTION ON/OFF button to display ON.
Whenever you press the CAPTION ON/OFF button, the setting is toggled.
The screen is reset to the regular screen after a few seconds.

C is displayed when CAPTION
ON/OFF is set to ON.

PRINT CAPTION : [ON]

PRINT   CAPTION

[ON]
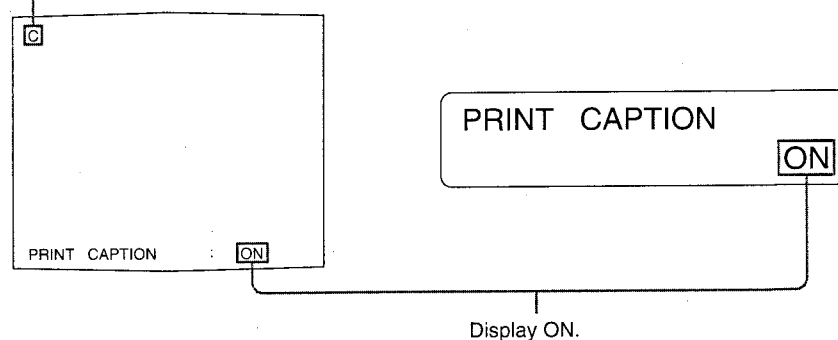
Display ON.

Making a printouts without a caption
Press the CAPTION ON/OFF button to display OFF instead of ON.

2 Press the PRINT button.
A printout with a caption is output.

MC-Service

You can delete images stored to memory pages, either individually or as a group, by using the CLEAR button.

Whether images are deleted individually or as a group depends on the setting of CLEAR on the FUNCTION-SETUP menu.

Setting the Function of the CLEAR Button
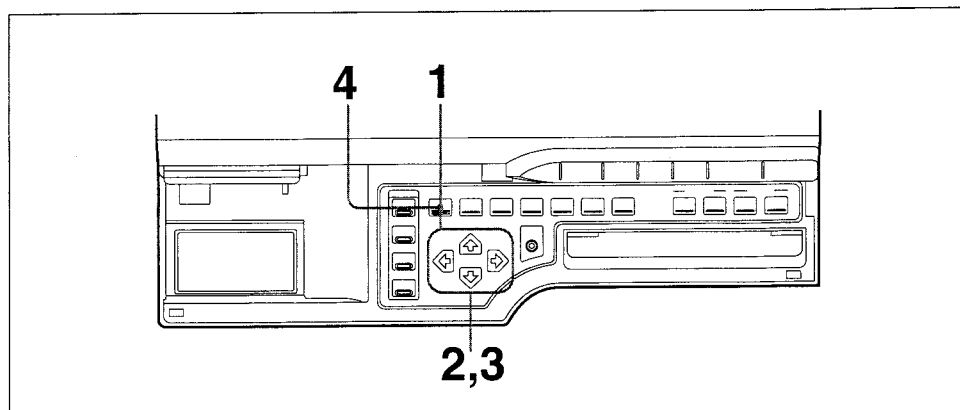
1 Press the MENU button, then select FUNCTION-SETUP from the displayed menu by pressing the ⇦ or ⇨ button.
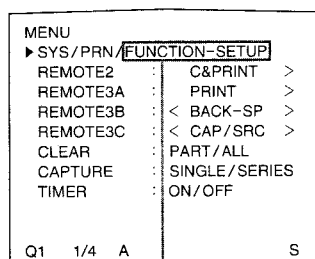
```
MENU
▶ SYS/PRN/FUNCTION-SETUP
   REMOTE2    :   C&PRINT   >
   REMOTE3A   :   PRINT     >
   REMOTE3B   : < BACK-SP   >
   REMOTE3C   : < CAP/SRC   >
   CLEAR      :   PART/ALL
   CAPTURE    :   SINGLE/SERIES
   TIMER      :   ON/OFF

Q1   1/4   A                   S
```

Press the ⇦ or ⇨ button until
FUNCTION-SETUP appears.

```
FUNCTION  SETUP
SYS/PRN/FUNCTION
```
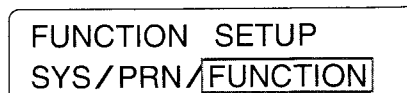
Press the ⇦ or ⇨ button until FUNCTION
appears.

2 Select CLEAR by pressing the ⇧ or ⇩ button.

```
▶CLEAR       : PART/ALL
  CAPTURE    : SINGLE/SERIES
  TIMER      : ON/OFF

Q1   1/4   A                   S
```
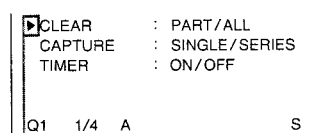
Position the cursor to CLEAR by
pressing the ⇧ or ⇩ button.

```
CLEAR           :
                PART/all
```

Press the ⇧ or ⇩ button until
CLEAR appears.

3 Select the function of the CLEAR button by pressing the ⇦ or ⇨ button.

```
▶ CLEAR      : PART/ALL
  CAPTURE    : SINGLE/SERIES
  TIMER      : ON/OFF

  Q1   1/4   A                    S
```
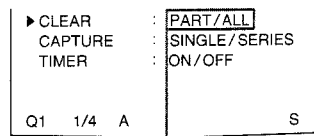
Switch the desired function to green by pressing the ⇦ or ⇨ button.

```
┌─────────────────────────────┐
│  CLEAR          :           │
│                   PART/all  │
└─────────────────────────────┘
```
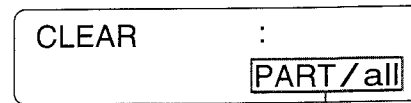
Display the desired function in capital letters by pressing the ⇦ or ⇨ button.

Function of the CLEAR button	Settings
To delete all images stored in the printer	ALL
To delete images individually	PART

Once you set the function of the CLEAR button, the CLEAR button functions according to the setting until the function setting is changed.

4 Press the MENU button.
The regular screen appears.

MC-Service

Deleting the Images Stored to Memory Pages (continued)

Deleting Images

Deleting all Images stored in the printer as a group

Before deleting images
Set CLEAR to ALL on the FUNCTION-SETUP menu.

Note
You cannot restore images once they have been deleted.
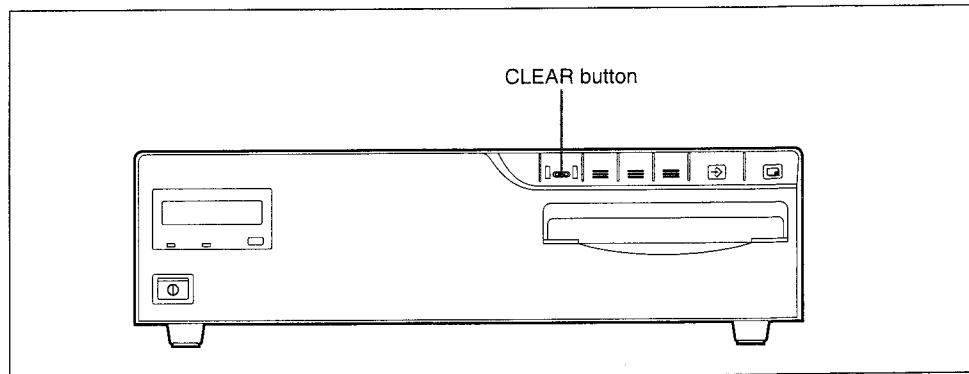
Press the CLEAR button.
All images stored in the printer are deleted together.

Deleting certain of multiple images in a single memory page

You can delete unwanted images from a single memory page.

Before deleting images
Set CLEAR to PART on the FUNCTION-SETUP menu.
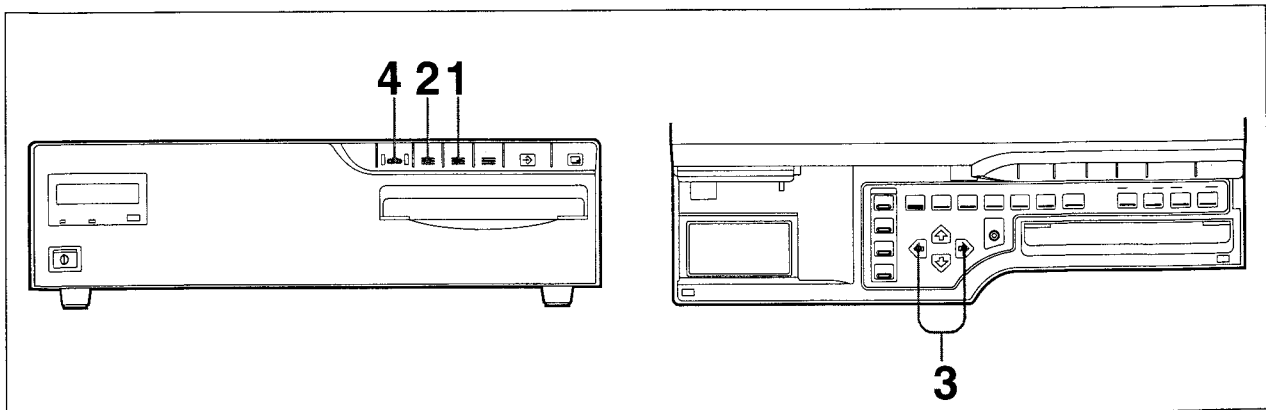
1 Press the SOURCE/MEMORY button when the source image is displayed on the video monitor screen.
The image stored in memory is displayed on the screen.

2 Select the memory page, in which the images to be deleted are stored, by pressing the MEMORY PAGE button.

3 Select the image to be erased by pressing the ⇦ or ⇨ button.
Example: To delete the sixth image of 16 reduced images

```
┌─────────────────────────┐
│                         │
│  *     *     *     *     │
│                         │
│  *    [*]    *     *     │
│                         │
│  *     *     *     *     │
│                         │
│  *     *     *     *     │
│ Q1  06/16  A          M  │
└─────────────────────────┘
```
Position the blinking cursor to this point with the ⇦ or ⇨ button.
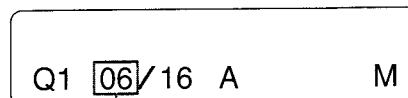
```
┌─────────────────────────────────┐
│                                 │
│  Q1  [06]/16  A          M       │
│                                 │
└─────────────────────────────────┘
```
Display 06 by pressing the ⇦ or ⇨ button.

Note

When the menu is displayed on the video monitor screen, you cannot select the image by pressing the ⇦ or ⇨ button. Press the MENU button so that the menu disappears.
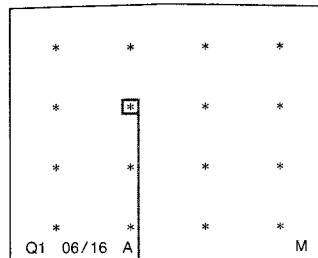
4 Press the CLEAR button.
The image selected in the step **3** is deleted.

```
┌─────────────────────────┐
│                         │
│  *     *     *     *     │
│                         │
│  *    [*]    *     *     │
│                         │
│  *     *     *     *     │
│                         │
│  *     *     *     *     │
│ Q1  06/16  A          M  │
└─────────────────────────┘
```
Becomes whitish.

```
┌─────────────────────────────────┐
│                                 │
│  Q1   06/16  A          M        │
│                                 │
└─────────────────────────────────┘
```
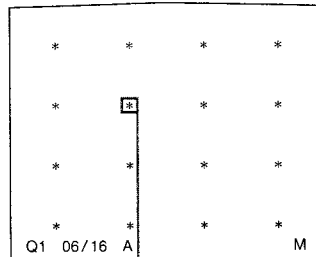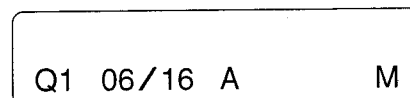
5 Repeat steps **3** and **4** until you have deleted all the images you want to delete.

6 Repeat steps **2, 3, 4** and **5** if you want to delete other images in another memory page.

MC-Service

Supplied Accessories

The printer is packed together with the following accessories. Check that nothing is missing from your package.

Ink ribbon holder (1)   Paper tray (1)

AC power cord (1)   Paper cover (1)

Color printing pack (1)
Warranty card (1) (for US and Canadian model only)
Instructions For Use (1)
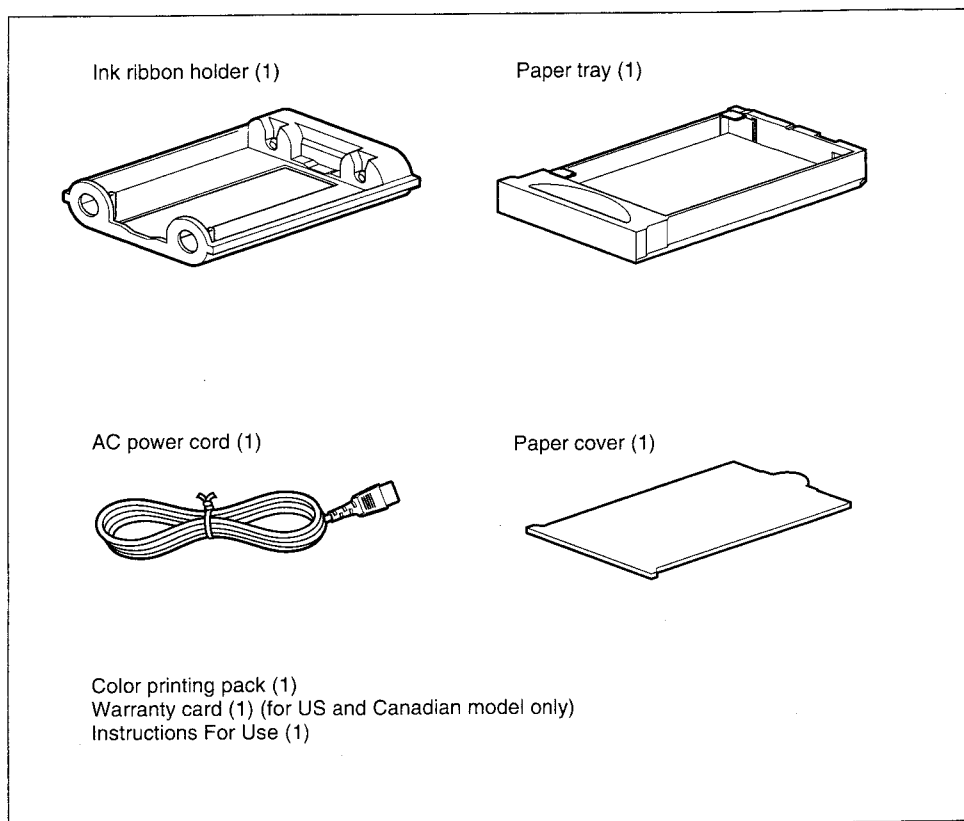
Notes
- Retain the original carton and packing materials in case you have to transport the unit in the future.
- Remove the ink ribbon holder and paper tray when transporting the printer.

Assembly

Attach the supplied paper cover, paper tray and ink ribbon holder to the printer.
For details of how to assemble them, see the pages given in parentheses.

Ink ribbon holder
(Load the ink ribbon into
the ribbon holder first,
then mount as a unit.)
(page 8)

Paper cover

Paper tray (page 11)

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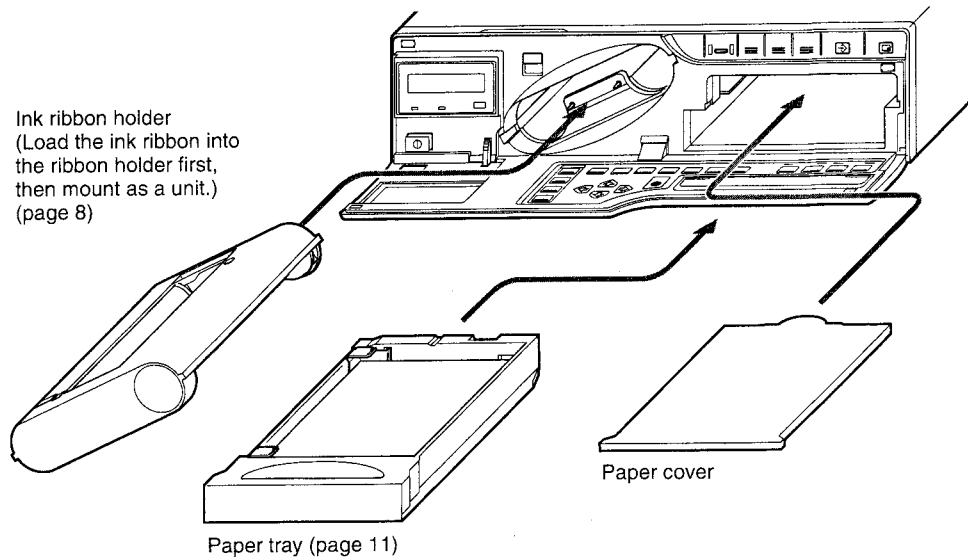
Supplied Accessories (continued)

Preparing the Remote Control Unit (Not Supplied)

The following remote control units (not supplied) allow you to control the printer remotely.
- RM-5500 Remote Control Unit: Used to connect to the REMOTE 1 connector
- RM-91 Remote Control Unit: Used to connect to the REMOTE 2 connector.
- FS-30 Foot Switch: Used to connect to the REMOTE 3 connector

The operations to be remotely controlled by the above remote control units depend on the remote operation settings made with the FUNCTION-SETUP menu. ("Selecting the Operating Mode for Automatic Printing Capabilities" page 66)

Using the RM-5500 remote control unit (not supplied)

The RM-5500 Remote Control Unit can be used either as a wireless type or wired type. The buttons on the remote control unit duplicate those on the front panel of the printer. (see "Front" page 90 and "Sub Panel" page 91)
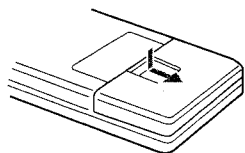
Inserting batteries
Install the batteries in the remote control unit before using it.

1 Remove the battery compartment cover.

2 Insert the two R6 (size AA) 1.5 V batteries.
Note the polarity. Be careful to insert the batteries correctly.
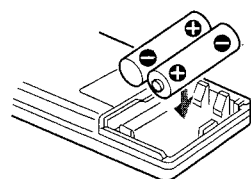
3 Replace the cover.

Battery life
The battery life depends on how much you use the remote control unit. On average, batteries last for about 6 months. Install fresh batteries as soon as you notice the unit's range becoming shorter.

Notes

When using the batteries:
- Remove the batteries from the remote control unit if you do not intend to use it for an extended period of time. The batteries may leak if you leave them in the remote control unit.
- Should the batteries leak, clean the battery case thoroughly with a soft cloth and install fresh batteries.
- Be careful to insert the batteries correctly. Note the polarity, as indicated inside the battery compartment.
- Replace exhausted batteries with fresh ones. Never mix a fresh battery with a used battery or with a different kind of battery.

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Using the RM-5500 remote control unit (not supplied) as a wireless unit

When using the remote control unit as a wireless unit, aim the head of the remote control unit at the remote sensor on the printer. With fresh batteries, the range of the remote control unit is about 7 meters.

Remote sensor

Color video printer

7m

30°   30°

RM-5500 Remote Control Unit
(not supplied)
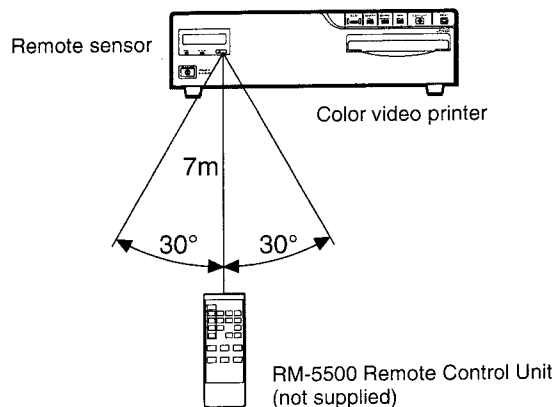
Using the RM-91/FS-30 (not supplied)

The operation of the RM-91 Remote Control Unit and FS-30 Foot Switch can be controlled remotely by sending a pulse signal to the REMOTE 2 connector (for RM-91, see page 84) and the REMOTE 3 connector (for FS-30, see page 85) in addition to the remote operation setting on the FUNCTION-SETUP menu.

MC-Service

Connections

To enable printing, video equipment to act as an input signal source, and a video monitor to display images or menus must be connected.
The following diagrams illustrate how to make the input, output and remote control connections. Use this as a guide when connecting the necessary signals to and from the equipment to be used for printing.

Notes
- Turn off the power of each device before attempting to make any connections.
- Connect the AC power cord last.

Making Connections for Storing Video Images

Connect the video equipment providing the video images to be printed.
Connect the video equipment which will be used in actual printing, using the following diagram as a guide.
Before connecting the video equipment, see "Important safeguards/notices for use in the medical environment" on page 2.

Video equipment

to RGB output connectors

to composite video output connector

75-ohm coaxial cable with BNC connectors

to S-VIDEO output connector

to S-VIDEO INPUT

to RGB/SYNC INPUT

Connecting cable (with DIN 4-pin connectors) YC-15EV

75-ohm coaxial cable with BNC connectors

to VIDEO INPUT

to AC IN

75-ohm termination switch* → ON | ON | OFF

NTSC/PAL selector** | NTSC | PAL

to wall outlet

AC power cord (supplied)
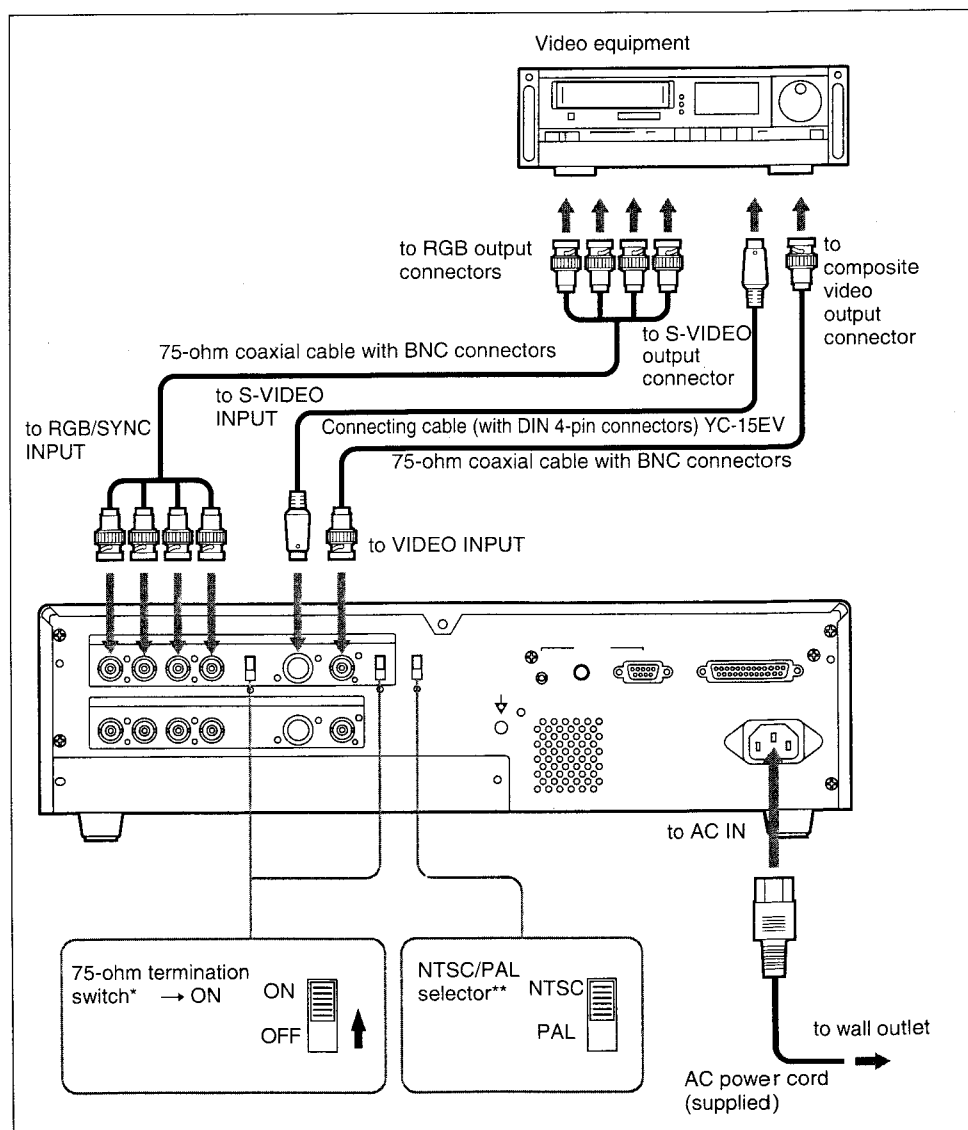
* Normally, set this switch to ON. Set it to OFF if the level of the input signal drops when you connect additional video equipment.
** • Set the NTSC/PAL selector to your TV system.
  To switch the TV system, turn the power off once, then change the setting. If you change the setting with the power on, this mode will not be switched.
  • The UPK-5501NP Memory Board should be mounted if you use the printer in PALmode. (see page 93)

Making Connections for Viewing Images to be Printed on the Video Monitor

Connect a video monitor to view stored images and to check those to be printed. Connect the necessary video monitor which will be used in actual printing, using the following diagram as a guide.
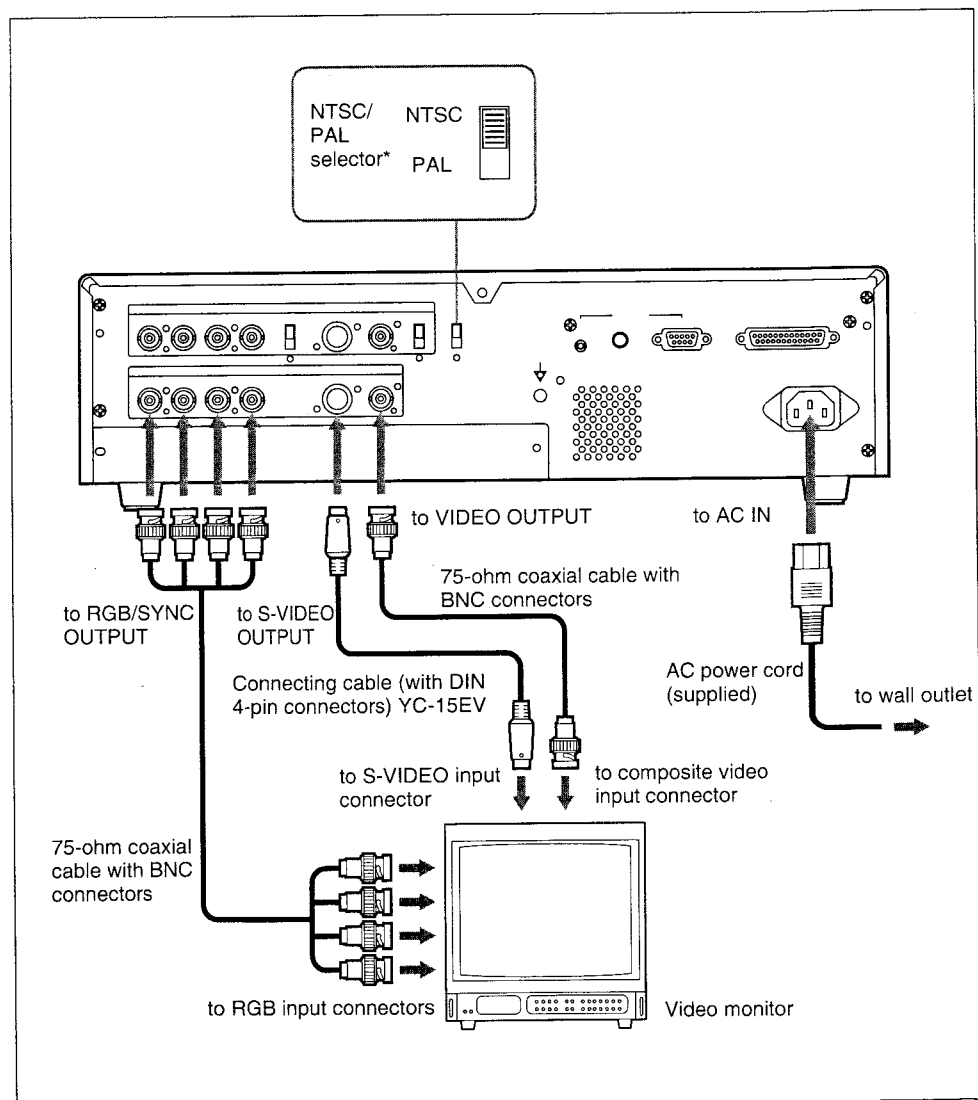Before connecting the video equipment, see "Important safeguards/notices for use in the medical environment" on page 2.
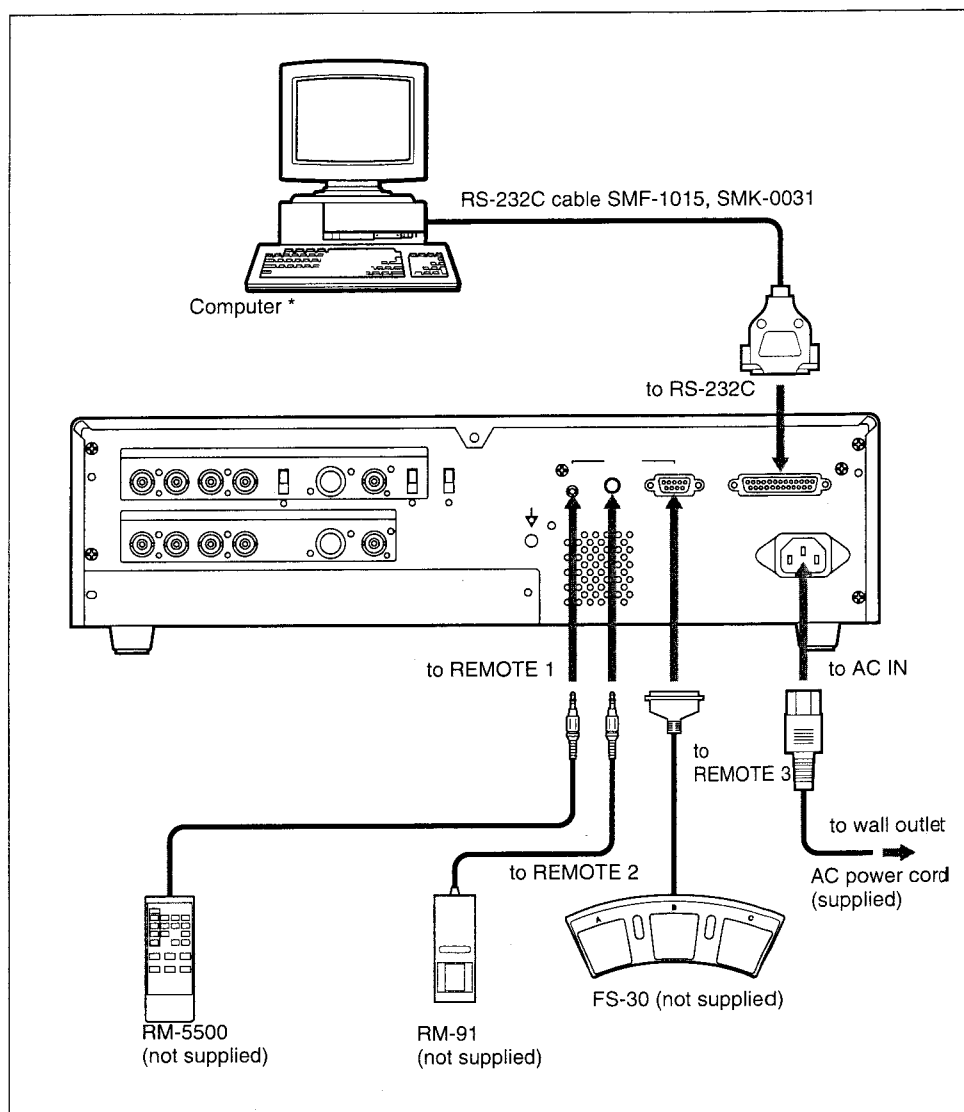

* • Set the NTSC/PAL selector to your TV system.
  To switch the TV system, turn the power off once, then change the setting. If you change the setting with the power on, the mode will not be switched.
  • The UPK-5501NP Memory Board should be mounted to enable use of the printer in PAL mode. (see page 93)

MC-Service

Connections (continued)

Making Connections to Enable Remote Control

The printer can be controlled remotely by connecting the RM-5500 Remote
Control Unit (not supplied), RM-91 Remote Control Unit (not supplied), the FS-30
Foot Switch (not supplied) or the personal computer.

RS-232C cable SMF-1015, SMK-0031

Computer *

to RS-232C

to REMOTE 1

to AC IN

to REMOTE 2

to
REMOTE 3

to wall outlet

AC power cord
(supplied)

FS-30 (not supplied)
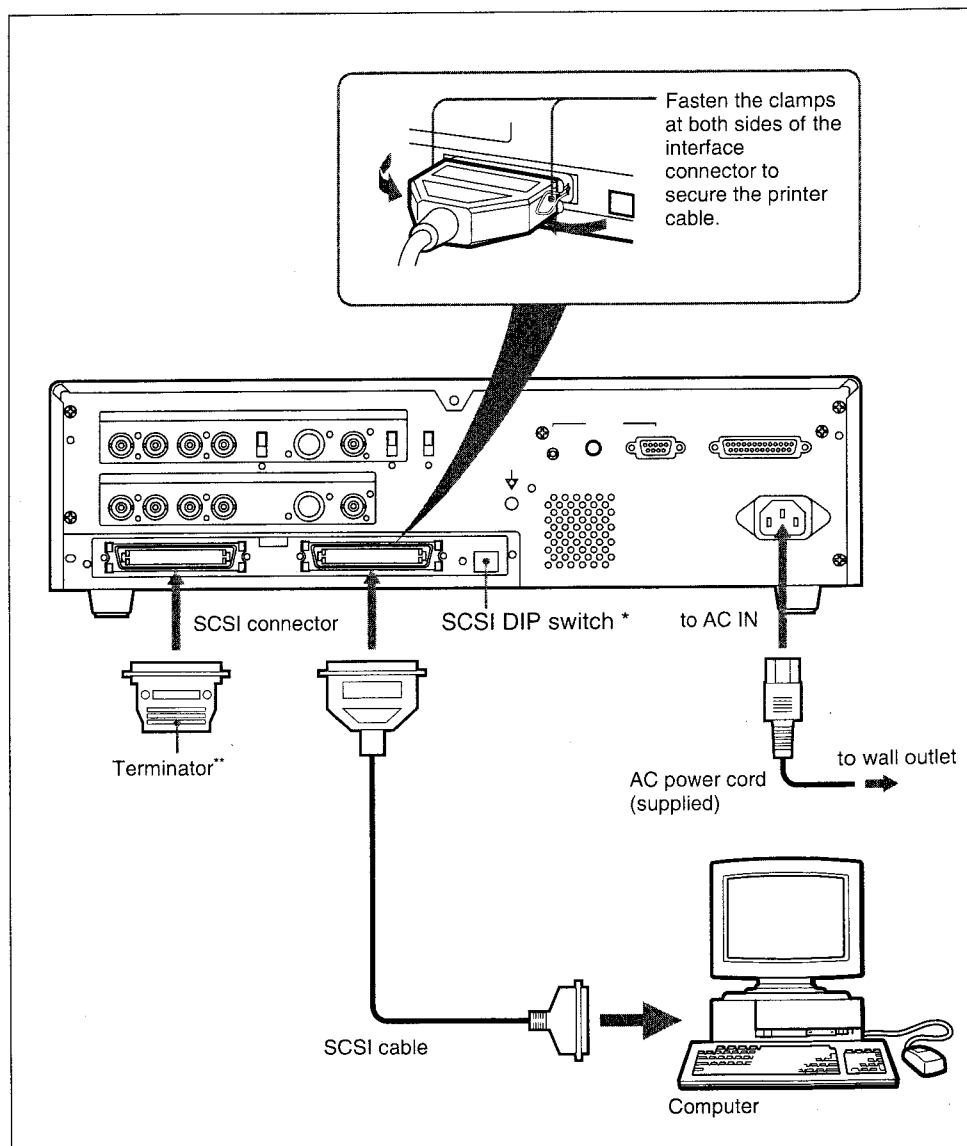
RM-5500
(not supplied)

RM-91
(not supplied)

* When connecting a personal computer, select the appropriate baud rate from the SYSTEM-SETUP
menu ("Setting the Baud Rate for Computer Communication" page 75)

The UPK-5502SC Digital Interface Board (not supplied) allows you to make a printout of a computer image by using the personal computer with a graphical application software program.

For detailed information on the UPK-5502SC Digital Interface Board (not supplied), read the instruction manuals supplied with the UPK-5502SC.

Fasten the clamps at both sides of the interface connector to secure the printer cable.

SCSI connector   SCSI DIP switch *   to AC IN

Terminator**

to wall outlet

AC power cord (supplied)

SCSI cable

Computer

* Up to seven SCSI devices can be connected to the SCSI bus by using a daisy chain configuration. Each device is identified by ID number from 0 to 7.
For details of how to set the DIP switch and connections between the computer and the printer, refer to the instruction manuals supplied with the UPK-5502SC Digital Interface Board and the computer.
** To transfer data between SCSI devices, you have to connect terminators at both ends of daisy chain connection. When one of the two SCSI connectors of the printer is not used, connect the SCSI terminator to the other vacant SCSI connector.

Operation | 49

You can set up the printer specification and store three sets of values as user set 1, 2 and 3. Once you have adjusted and stored, the printer operates according to the selected user setting until those values are modified. You can set up the printer according to the intended purpose, connected equipment or your individual preferences.

There are 4 menus that are used to set up the printer. The menus and functions that can be set with those menus are as follows.

Menu	Functions to be set	Reference page
ANALOG SETUP	• Compensating for the input signals. • Matching the video monitor color to the printout color.	51, 54
COLOR ADJUST SETUP	Adjusting the printout color (color intensity and contrast).	59
SYSTEM-SETUP	• Erasing the screen display. • Erasing the printer window display and adjusting the brightness of the printer window display. • Selecting whether the operation and error tones sound. • Setting the baud rate for computer communication. • Registering the user setting.	69, 71, 74, 75, 77
PRINT-SETUP	• Selecting whether white borders are added to multiple reduced images. • Making copies of the same image on a single printout of multiple reduced images. • Adjusting the printout quality.	30, 31, 57, 63
FUNCTION-SETUP	• Selecting operation mode for automatic printing capabilities of remote commanders connected to REMOTE 2 and REMOTE 3 connectors. • Erasing the images stored into memory. • Selecting whether multiple reduced images are automatically stored at regular intervals . • Selecting the image which appears after storing the image into memory, source image or memory image.	25, 38, 66
SIZE SHIFT SETUP *	• Changing the printout area. • Changing the printout size.	63

* The SIZE SHIFT SETUP menu is displayed by pressing the EXEC button after selecting ASPECT on the PRINT-SETUP menu.

This section explains the following settings and adjustments.
- Compensating for the input signals (page 51)
- Matching the video monitor color to the printout color (page 54)
- Adjusting the sharpness (page 57)
- Adjusting the printout color (page 59)
- Changing the printout size/printout area (page 63)
- Selecting the operating mode for automatic printing capability (page 66)
- Erasing the screen display (page 69)
- Erasing the printer window display and adjusting the printer window display brightness (page 71)
- Selecting whether to enable the operation and error tones (page 74)
- Setting the baud rate for computer communication (page 75)
- Registering the printer settings and adjusted values as a user setting (page 77)

Compensating for the Input Signals

A video image recorded under poor conditions may be of poor color quality. If the signal is an NTSC or PAL composite video signal or separate luminance (Y) and chrominance (C) signals, you can correct the color and level of the input signal to a certain extent.

Note
You cannot adjust an image once it has been stored in memory. Restore an image after adjustment.
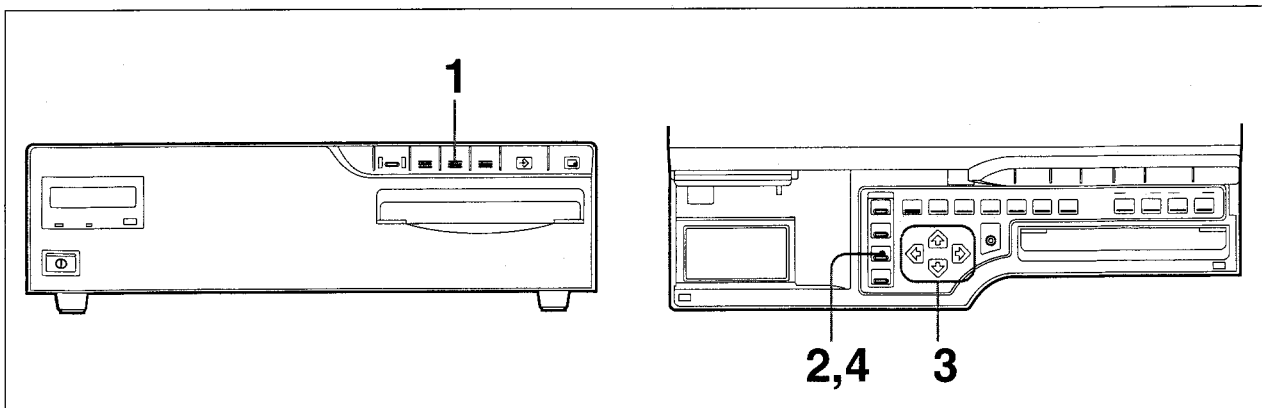
1 When the memory image is displayed on the screen, press the SOURCE/ MEMORY button.
The image from the video source appears.

MC-Service

Setting Up the Printer (continued)

2 Press the ANALOG button.
The following screen appears.

ANALOG SETUP menu

```
ANALOG  SETUP

▶HUE        :   0    ·······¡········
 COLOR      :   0    ·······¡········
 GAIN       :   0    ·······¡········
 AGC        :  ON/OFF
 MONI  C-R  :   0    ·······¡········
 MONI  M-G  :   0    ·······¡········
 MONI  Y-B  :   0    ·······¡········


 Q1   1/4   A                        S
```

Part of the ANALOG SETUP menu

```
┌──────────────────────────────┐
│  HUE          :          0   │
│  ─ ─ ─ ─ ─ ─ ─✱─ ─ ─ ─ ─ ─   │
└──────────────────────────────┘
```

3 Perform the adjustments as follows.
① Select the adjustment item by pressing the ⇧ or ⇩ button.
② Perform the adjustment by pressing the ⇦ or ⇨ button.

To adjust the color intensity, hue and contrast

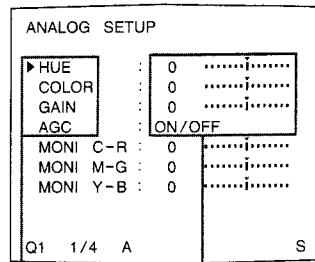| Adjustment	Menu adjustment item	Button and operation result	
		⇨ button	⇦ button
Hue*	HUE **	The hue becomes greenish.	The hue becomes purplish.
Color intensity	COLOR **	The color intensity strengthens.	The color intensity weakens.
Contrast	GAIN	The contrast strengthens.	The contrast weakens.

*   In PAL mode, no HUE adjustment is provided on the ANALOG SETUP menu.
**   Adjust the color such that skin tones appear natural. For the COLOR and HUE adjustment, you can correct the color intensity and hue of an NTSC composite video signal or a separated luminance (Y) and chrominance (C) signal.

## When the printout or monitor image appears blakish or whitish
Adjust the input signal to the optimum level for printing.

Menu adjustment item	Selection	When selecting
AGC (Automatic Gain Control)	OFF	Normal (when the proper signal is input)
	ON	When the printout or monitor image appears blackish or whitish.

```
ANALOG  SETUP

▶ HUE      :  0    ·······i·······
  COLOR    :  0    ·······i·······
  GAIN     :  0    ·······i·······
  AGC      :  ON/OFF
  MONI  C-R :  0   ·······i·······
  MONI  M-G :  0   ·······i·······
  MONI  Y-B :  0   ·······i·······

Q1   1/4   A                    S
```

| HUE | : | 0 |
| ---------*--------- |

| COLOR | : | 0 |
| ---------*--------- |

| GAIN | : | 0 |
| ---------*--------- |

| AGC | : |
| on/OFF |

Position the cursor to the desired item by pressing the ⇧ or ⇩ button.

Make adjustment by pressing the ⇦ or ⇨ button.
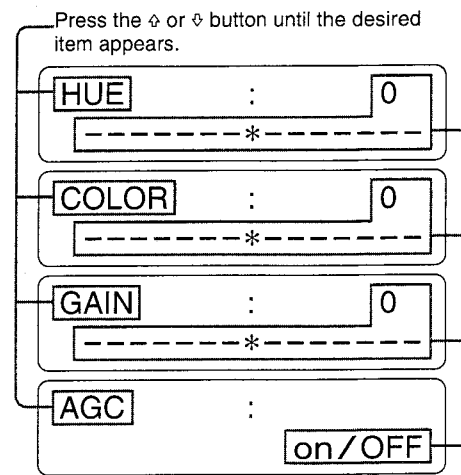
Make adjustment by pressing the ⇦ or ⇨ button.

4 Press the ANALOG button.
The regular screen appears.

MC-Service

Matching the Video Monitor Color to the Printer Color

To match the color of the monitor image to that of the printout, adjust the monitor and printer colors such that the monitor color is the same as that of the printout. The printer outputs either of two kinds of video signals according to the printer settings.
- EE (E to E): Signals are output to the monitor after being processed by the printer's circuitry.
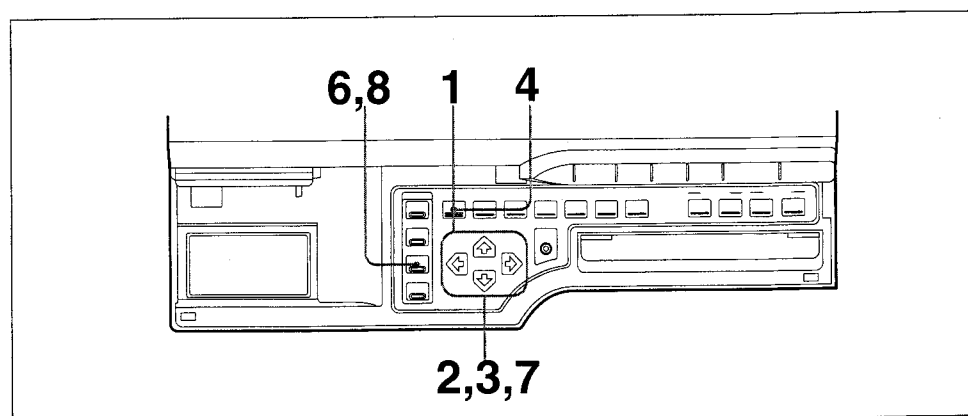- THRU (through): Signals are output to the monitor as is.

Before adjusting the printout color

The monitor color may not be adjusted correctly even if the printer color is correctly adjusted. Check the color of the video monitor before adjusting the printout color. In such a case, use the THRU signal.
After adjusting the color of the video monitor using video monitor controls, adjust the color of the printer's output signal.

Note

This adjustment is performed to adjust the color of the printer output signal when the monitor color is unsatisfactory. This adjustment does not affect the printout itself. To adjust the color of the printout, see "Adjusting the Sharpness" on page 57 and "Adjusting the Printout Color" on page 59)

1 Press the MENU button, then select SYSTEM-SETUP by pressing the ⇦ or ⇨ button.

```
MENU
▶SYSTEM-SETUP PRN/FUNC
  DISPLAY     : ON/OFF
  BEEP        : ON/OFF
  LCD         : ON/OFF
  LCD-CNTR    :  0    ......|......
  BAUDRATE    : 12/24/48/9600
  MONITOR     : THRU/EE
  USER SET    : 1/2/3  [EXEC]


Q1   1/4   A                    S
```
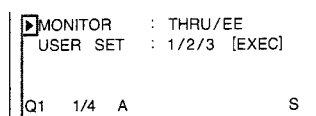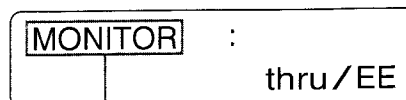
Press the ⇦ or ⇨ until SYSTEM-SETUP appears.

```
SYSTEM  SETUP
 SYSTEM / PRN / FUNC
```

Press the ⇦ or ⇨ until SYSTEM appears.

2 Select MONITOR by pressing the ⇧ or ⇩ button.

```
▶MONITOR    : THRU/EE
  USER SET  : 1/2/3 [EXEC]

Q1   1/4   A                S
```

Position the cursor to MONITOR by
pressing the ⇧ or ⇩ button.

```
 MONITOR   :
               thru/EE
```

Display MONITOR by pressing the ⇧
or ⇩ button.

3 Select EE by pressing the ⇦ or ⇨ button.

```
▶ MONITOR   : THRU/EE
  USER SET  : 1/2/3 [EXEC]

Q1   1/4   A                S
```
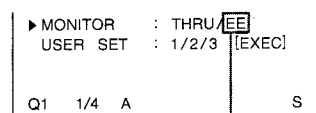
Switch EE to green by pressing
the ⇦ or ⇨ button.

```
 MONITOR   :
               thru/EE
```
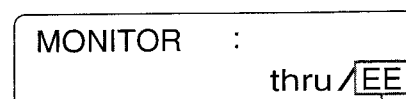
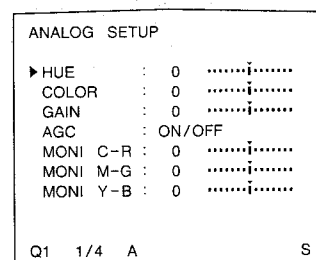Display EE in capital letters by pressing the
⇦ or ⇨ button.

4 Press the MENU button.
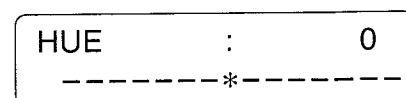The regular screen appears.

5 Store a new image into memory and make a printout.
Adjust the settings by comparing the printout with the image on the monitor.

6 Press the ANALOG button.
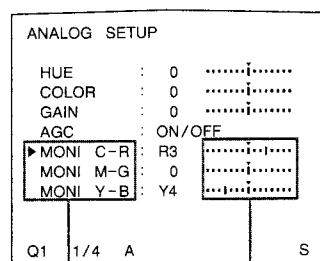The following screen appears.

ANALOG SETUP menu

```
 ANALOG  SETUP

▶HUE        :  0    ······¦······
 COLOR      :  0    ······¦······
 GAIN       :  0    ······¦······
 AGC        : ON/OFF
 MONI C-R  :  0    ······¦······
 MONI M-G  :  0    ······¦······
 MONI Y-B  :  0    ······¦······


 Q1   1/4   A                S
```

Part of the ANALOG SETUP menu

```
 HUE        :       0
 ———————*———————
```

7 Adjust the monitor while comparing the printout with the image on the
monitor.
① Select the adjustment item by pressing the ⇧ or ⇩ button.
② Perform adjustment by pressing the ⇦ or ⇨ button.

Continue to next page →

MC-Service

Setting Up the Printer (continued)

Menu Adjustment item	When selecting	Button to be pressed	Adjustment direction on the menu
MONI C-R	To make the screen become reddish	⇨ button	Toward R (red)
	To make the screen become cyan (blue)	⇦ button	Toward C (cyan)
MONI M-G	To make the screen become greenish	⇨ button	Toward G (green)
	To make the screen become magenta (pink)	⇦ button	Toward M (magenta)
MONI Y-B	To make the screen become bluish	⇨ button	Toward B (blue)
	To make the screen yellowish	⇦ button	Toward Y (yellow)

Press the ⇧ or ⇩ button until the desired item appears.

```
ANALOG  SETUP

HUE       :  0      ·······¦·······
COLOR     :  0      ·······¦·······
GAIN      :  0      ·······¦·······
AGC       :  ON/OFF
▶MONI  C-R :  R3     ·······¦···¦·····
 MONI  M-G :  0      ·······¦·······
 MONI  Y-B :  Y4     ···¦···¦·······


Q1   1/4   A                    S
```

MONI C-R   R3
——————————+——*————

MONI M-G   0
——————————*————————

MONI Y-B   Y4
———*———+————————

Position the cursor to the desired item by pressing the ⇧ or ⇩ button.
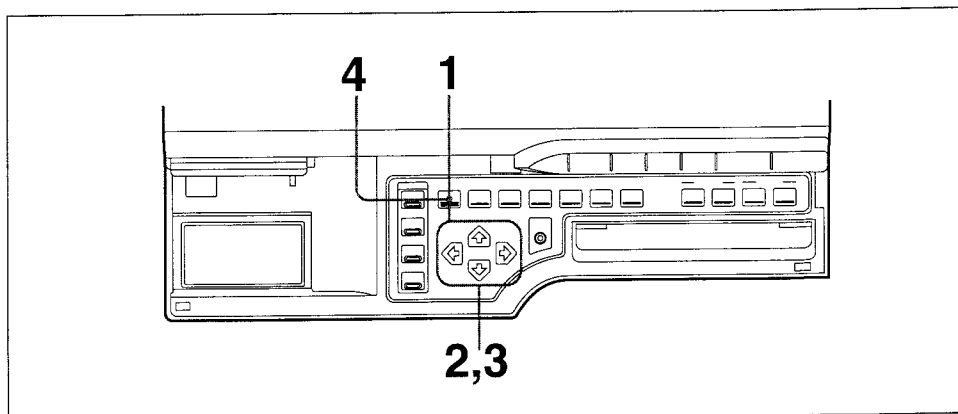
Make adjustment by pressing the ⇦ or ⇨ button.
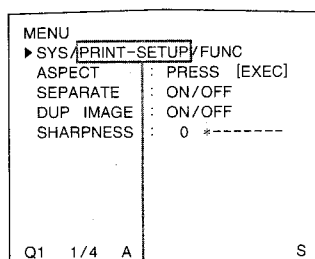
Make adjustment by pressing the ⇦ or ⇨ button.
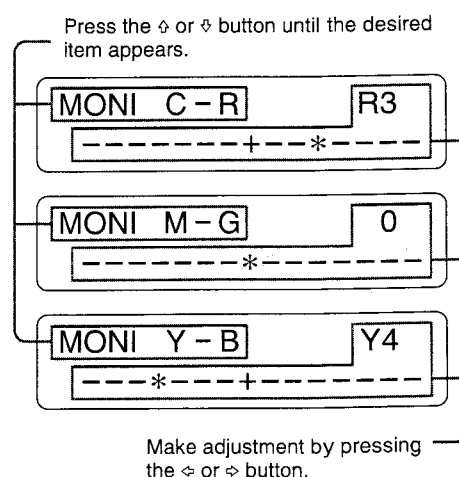
8 Press the ANALOG button.
The regular screen appears.

Adjusting the Sharpness

You can set the printout sharpness to any of 8 levels. The printout will appears softer or sharper depending on the definition of the subject outline. The image on the monitor is not affected by changing the sharpness settings. This adjustment affects only the quality of the printout. The setting remains effective until reset - even if you turn the power off.

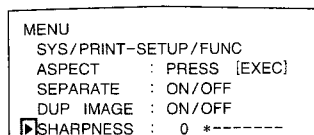**1** Press the MENU button, then select PRINT-SETUP by pressing the ⇦ or ⇨ button.

```
MENU
▶ SYS/PRINT-SETUP/FUNC
  ASPECT       : PRESS [EXEC]
  SEPARATE     : ON/OFF
  DUP IMAGE    : ON/OFF
  SHARPNESS    :  0 *-------



  Q1   1/4   A                S
```

Press the ⇦ or ⇨ button until
PRINT-SETUP appears.

```
PRINT  SETUP
    SYS/PRINT/FUNC
```

Press the ⇦ or ⇨ button until PRINT appears.

2 Select SHARPNESS by pressing the ⬆ or ⬇ button.

```
MENU
  SYS/PRINT-SETUP/FUNC
  ASPECT      : PRESS [EXEC]
  SEPARATE    : ON/OFF
  DUP IMAGE   : ON/OFF
▶ SHARPNESS   :  0 *-------
```

Position the cursor to SHARPNESS
by pressing the ⬆ or ⬇ button.

```
SHARPNESS :      0
           *-------
```
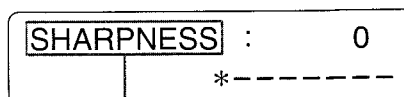
Press the ⬆ or ⬇ button until SHARPNESS
appears.

Continue to next page →

MC-Service

Setting Up the Printer (continued)

3 Select the desired sharpness by pressing the ⇦ or ⇨ button.
You can set the sharpness to any of 8 steps from 0 to +7. On a setting of step 4
corresponds to the standard sharpness.

```
MENU
  SYS/PRINT-SETUP/FUNC
  ASPECT      : PRESS  [EXEC]
  SEPARATE    : ON/OFF
  DUP  IMAGE  : ON/OFF
 ▶SHARPNESS   : [0  *-------]
```

```
SHARPNESS :          0
             [*-------]
```
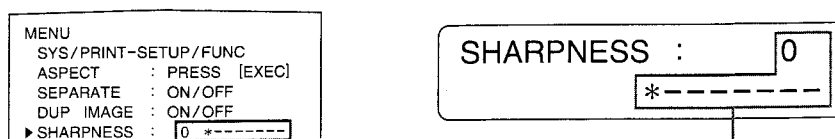
The number and the corresponding sharpness increase
every time you press the ⇨ button.
The number and the corresponding sharpness decrease
every time you press the ⇦ button.

When selecting	Content of settings
To make a soft outline	Toward step 0
To make a normal outline	Centered (step 4)
To make a sharp outline	To the right (toward step 7)

Note

When you make a printout of the image of the digital signal sent from the
computer via the UPK-5502SC Digital Interface Board (not supplied), the
printout of the signal sent from the computer without being compensated in the
printer is made if you set the sharpness to step 0.

**4** Press the MENU button.
The regular screen appears.

You can adjust the color intensity (RED/GREEN/BLUE) and contrast (DARK/LIGHT). You can store up to three settings for each user setting. Thus, up to 9 variations of color intensity and picture contrast setting can be stored.

These settings are managed according to the PRESET number. The color intensity and picture contrast of a printout are determined by recalling one of the three settings according to their PRESET numbers. Settings can be registered as Preset 1, 2 and 3 for each user settings. The printer retains these settings - even if you turn off the printer power. This is useful when you are using more than one item of video equipment, each having different characteristics, when you want to print images having different color qualities and picture contrast, and when multiple users access a single printer.

Also, you can make a printout using temporarily set values, without erasing the stored adjustment values.

Perform the adjustments while viewing the images stored in memory.

All values are factory-set to 0 for PRESET numbers 1, 2 and 3.

PRESET button   **3,4,5,7,8**

2,10 6   9
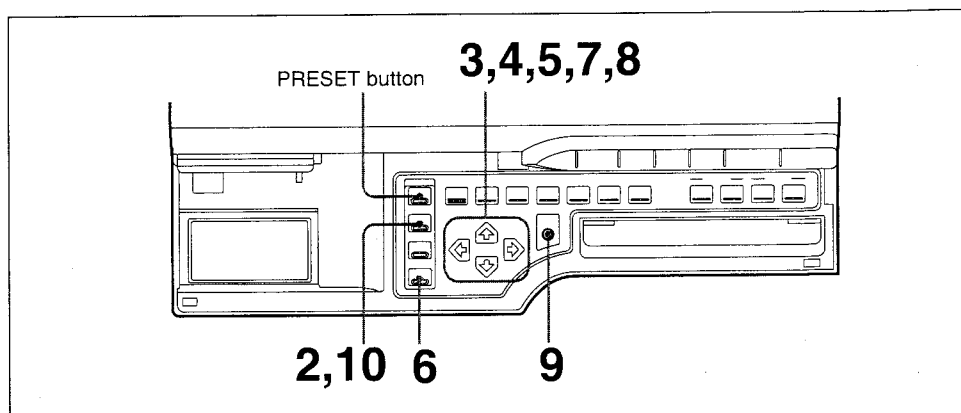
1 Display the stored image on monitor for adjustment.

2 Press the R/G/B/D/L button.
The following screen appears.

COLOR ADJUST SETUP menu

```
COLOR  ADJUST  SETUP

▶ PRESET      : 1 / 2 / 3
  RED  C-R    : 0    ·······i·······
  GREEN M-G : 0    ·······i·······
  BLUE  Y-B   : 0    ·······i·······
  DARK        : 0    ·······i·······
  LIGHT       : 0    ·······i·······
  SAVE        : 1 / 2 / 3  [EXEC]


Q1   1/4   A                    S
```

Part of COLOR ADJUST SETUP menu

```
PRESET :

              1 / - / -
```

Continue to next page →

3 Select PRESET by pressing the ⇧ or ⇩ button.

```
COLOR  ADJUST  SETUP

▶PRESET    : 1/2/3
 RED C-R    :  0    ·······|·······
 GREEN M-G:  0    ·······|·······
```

Position the cursor to PRESET by
pressing the ⇧ or ⇩ button.

```
PRESET  :

               1/-/-
```

Press the ⇧ or ⇩ button until PRESET
appears.

4 Select the PRESET number of the values to be adjusted or to be modified by pressing the ⇦ or ⇨ button.

```
COLOR  ADJUST  SETUP

▶PRESET    : 1/2/3
 RED C-R    :  0    ·······|·······
 GREEN M-G:  0    ·······|·······
```

Switch the desired PRESET number
to green.

```
PRESET  :

               1/-/-
```

Press the ⇦ or ⇨ button until the desired
PRESET number appears.

When modifying, you can preserve the original settings. (See "To retain the originally set value" on page 62.)

5 Adjust the printout color.
 ① Select the item to be adjusted by pressing the ⇧ or ⇩ button.
 ② Perform the adjustment by pressing the ⇦ or ⇨ button.

The RED, GREEN and BLUE color component and contrast settings are divided into 15 steps, from -7 to +7, indicated by a value and graph. The center of the graph corresponds to the standard color.
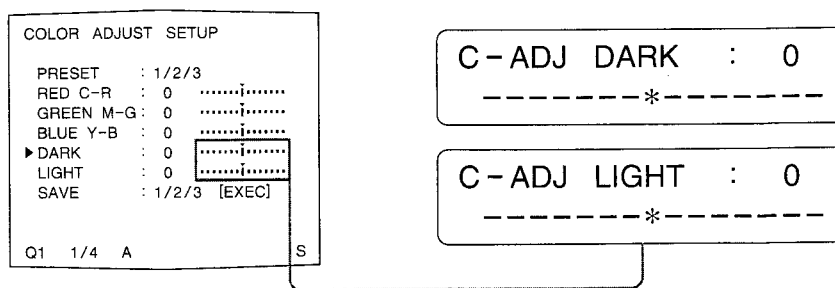
When adjusting the RED/GREEN/BLUE (color intensity)

Menu Adjustment item	When selecting	Button to be pressed	Adjustment direction on the menu
RED C-R	To make the image reddish	⇨ button	Toward R (red)
	To make the image cyan (blue)	⇦ button	Toward C (cyan)
GREEN M-G	To make the image greenish	⇨ button	Toward G (green)
	To make the image magenta (pink)	⇦ button	Toward M (magenta)
BLUE Y-B	To make the image bluish	⇨ button	Toward B (blue)
	To make the image yellowish	⇦ button	Toward Y (yellow)

```
COLOR ADJUST SETUP

  PRESET    : 1/2/3
▶ RED C-R   : 0    [.......¡.......]
  GREEN M-G : 0    [.......¡.......]
  BLUE Y-B  : 0    [.......¡.......]
  DARK      : 0    .......¡.......
  LIGHT     : 0    .......¡.......
  SAVE      : 1/2/3  [EXEC]


Q1   1/4   A                    S
```

```
C - ADJ  RED      :   0
-------*-------
```

```
C - ADJ  GREEN  :   0
-------*-------
```

```
C - ADJ  BLUE    :   0
-------*-------
```

Adjust the color intensity
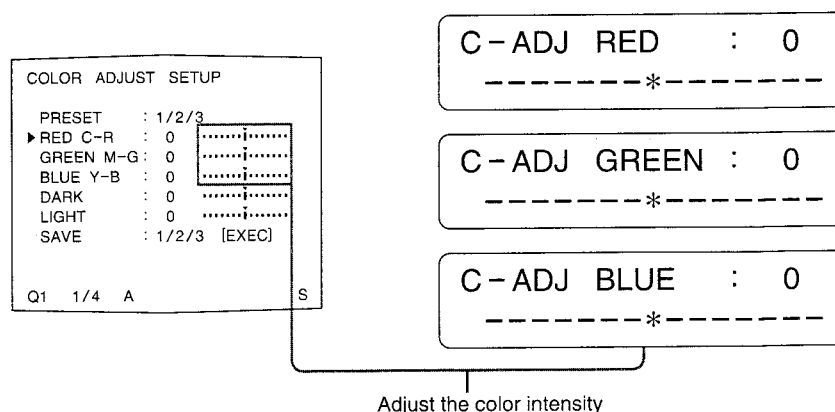
When adjusting DARK/LIGHT (contrast)

Adjustment item	When selecting
DARK	To adjust the dark area of an image
LIGHT	To adjust the light area of an image

```
COLOR ADJUST SETUP

  PRESET    : 1/2/3
  RED C-R   : 0    .......¡.......
  GREEN M-G : 0    .......¡.......
  BLUE Y-B  : 0    .......¡.......
▶ DARK      : 0    [.......¡.......]
  LIGHT     : 0    [.......¡.......]
  SAVE      : 1/2/3  [EXEC]


Q1   1/4   A                    S
```

```
C - ADJ  DARK    :   0
-------*-------
```

```
C - ADJ  LIGHT   :   0
-------*-------
```

The contrast in the dark area or light area is increased
in the + direction by pressing the ⇨ button.
The contrast in the dark area or light area is weakened
in the - direction by pressing the ⇦ button.

Once you have changed the value

Once you have changed the value, TEMP (temporary) appears on the menu
screen. TEMP indicates that the settings are temporary and have not yet been
stored.

MC-Service

6 Once you have made all necessary adjustments, check your presetting by pressing the REVIEW button.
While the REVIEW button is held down, the display is cleared from the screen. The results of the adjustment can thus be viewed easily.
You can make a printout with the settings made as explained above.

7 Select SAVE by pressing the ⇧ or ⇩ button.
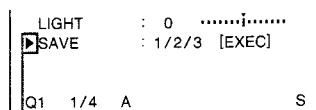
```
 LIGHT       :  0    ·······|······
▶SAVE       : 1/2/3  [EXEC]

Q1  1/4  A                        S
```
Position the cursor to SAVE by pressing the ⇧ or ⇩ button.
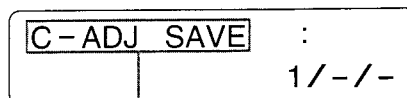
```
C-ADJ  SAVE   :
                     1 / - / -
```
Press the ⇧ or ⇩ button until SAVE appears.

8 Select the SAVE number to which new settings are to be stored by pressing the ⇦ or ⇨ button.
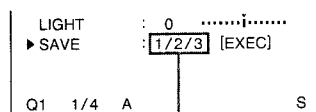
```
 LIGHT       :  0    ·······|······
▶SAVE       : 1/2/3  [EXEC]

Q1  1/4  A                        S
```
Switch the desired SAVE number to green.
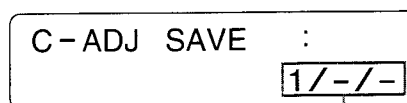
```
C-ADJ  SAVE   :
                     1 / - / -
```
Press the ⇦ or ⇨ button until the desired SAVE number appears.

To retain the originally set value
Select a SAVE number which is different from the PRESET number selected in step **4**.

9 Press the EXEC button.
The settings are registered to the SAVE number selected in step **8**.
TEMP disappears from the menu.

10 Press the R/G/B/D/L button.
The regular screen appears.

To copy the settings made for one certain PRESET number to another PRESET number.

1 Select the source PRESET number for which the settings to be copied are stored on the COLOR ADJUST SETUP menu.

2 Select the target SAVE number to which data is to be copied.

3 Press the EXEC button.
Settings stored to the PRESET number selected in step **1** are copied to the SAVE number selected in step **2**.
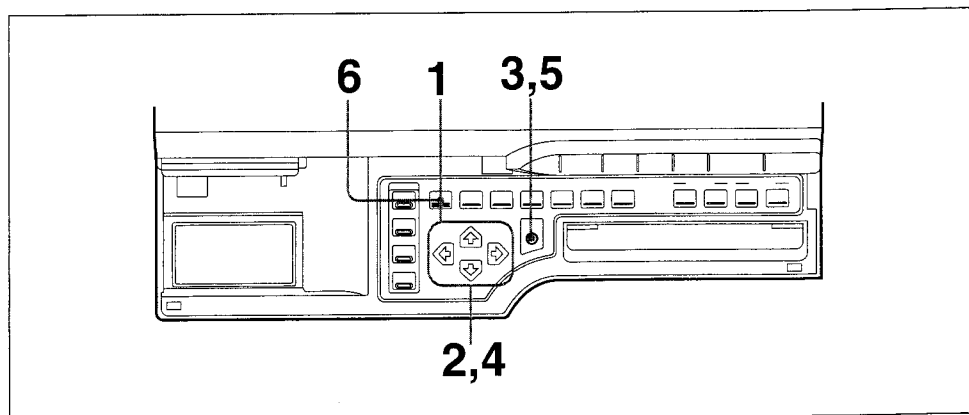
To recall the PRESET number in which printout color settings (color intensity and contrast) are stored
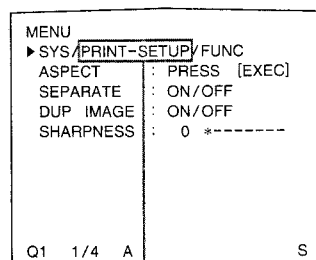Press the PRESET button.
The data of the currently selected PRESET number appears. Repeatedly pressing the PRESET button causes the PRESET number to change in the order of 1, 2 and 3.

When you print an image that is narrower or wider than the standard screen size, a black frame may be printed or the image may be partially cut. In such a case, you can change the screen size. Or, a black line may be produced on the printout even though it does not appear on the video monitor. Any portion for which there is no video signal is printed in black. This may occur when you make printouts after connecting a different video source or play back different video software. In such a case, you can adjust the printout area by moving the screen either horizontally or vertically. When a black frame appears around the printout, even after the printout area has been shifted, narrow the printout size because the image has been overscanned beyond the range of the regular screen.

1 Press the MENU button, then select PRINT-SETUP by pressing the ⇔ or ⇨ button.

```
MENU
▶SYS/PRINT-SETUP/FUNC
  ASPECT    : PRESS  [EXEC]
  SEPARATE  : ON/OFF
  DUP IMAGE : ON/OFF
  SHARPNESS :   0 *-------



  Q1  1/4  A                   S
```

Press the ⇔ or ⇨ button until PRINT- SETUP appears.

```
PRINT  SETUP
  SYS/PRINT/FUNC
```

Press the ⇔ or ⇨ button until PRINT appears.

2 Select ASPECT by pressing the ⇧ or ⇩ button.

```
MENU
  SYS/PRINT-SETUP/FUNC
▶ASPECT      : PRESS  [EXEC]
  SEPARATE   : ON/OFF
  DUP IMAGE  : ON/OFF
```
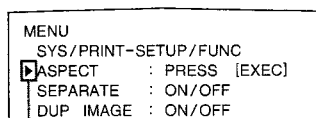
Position the cursor to ASPECT by pressing the ⇧ or ⇩ button.

```
ASPECT :
        PRESS  [EXEC]
```
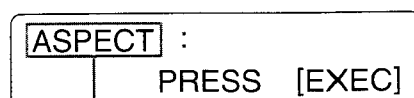
Press the ⇧ or ⇩ button until ASPECT appears.

MC-Service

Setting Up the Printer (continued)

Note

If you select ASPECT, then perform the following step, all images stored in the memory pages will be cleared. You can not keep these stored images.

3 Press the EXEC button.
The following screen appears.

SIZE SHIFT SETUP menu

```
SIZE  SHIFT  SETUP

  H-SHIFT  :  00  DOT(S)
  V-SHIFT  :  00  LINE(S)
▶ H-SIZE   :  896  DOTS
  V-SIZE   :  464  LINES

  PRESS    :  [EXEC]
  ABORT    :  [MENU]


 Q1   1/4   A                    S
```

Part of SIZE SHIFT SETUP menu

```
 H-SIZE    :

           896  DOTS
```

4 Adjust the printer according to the obtained printout.

① Select the item to be adjusted by pressing the ⇧ or ⇩ button.
② Perform the adjustment by pressing the ⇦ or ⇨ button.

When a black frame is printed or the image is partially cut

Adjust the printout size by using the H-SIZE and V-SIZE items from the menu.

When selecting	Adjustment item	Button to be used	Adjustment result
To change the size, adjust the position of the right edge. The left edge remains fixed. (The screen size changes horizontally.)	H-SIZE	⇨ button	Widened at the right edge.
		⇦ button	Narrowed with the left edge remaining fixed.
To change the size, adjust the position of the bottom edge. The top edge remains fixed. (The screen size changes vertically.)	V-SIZE	⇨ button	Enlarged downwards.
		⇦ button	Vertical sized reduced with the top edge remaining fixed.

Adjusting the printout size horizontally.

```
SIZE  SHIFT  SETUP

  H-SHIFT  :  00  DOT(S)
  V-SHIFT  :  00  LINE(S)
▶ H-SIZE   :  896  DOTS
  V-SIZE   :  464  LINES
```

```
 H-SIZE    :
           896  DOTS
```

```
 V-SIZE    :
           464  LINES
```
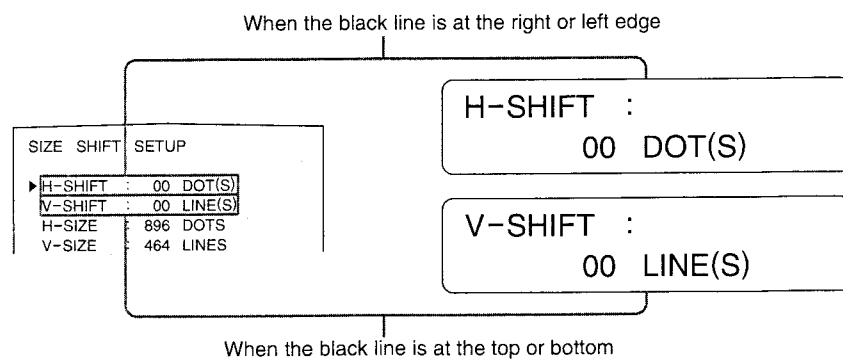
Adjusting the printout size vertically.
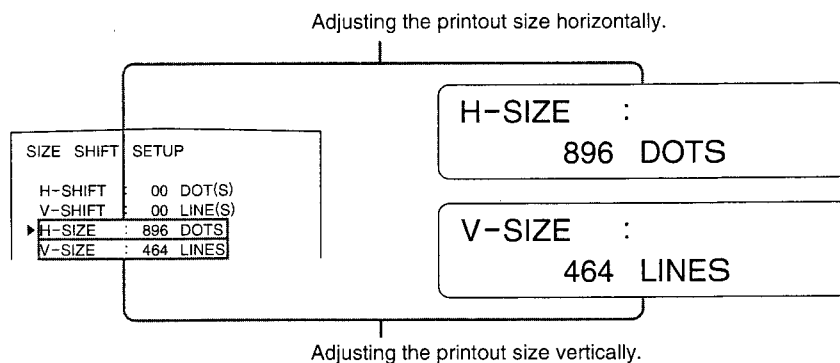
When a black line appears on the printout

Example: When the
black line is on the right
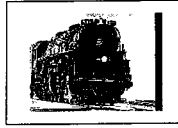
Adjust the printout area according to the position of the line on the printout, by using the H-SHIFT and V-SHIFT items on the menu.

Position where the black line appears	Menu adjustment item	Button to be used	Adjustment result
On the right	H-SHIFT (horizontal direction)	⇨ button	The image position shifts to the right with the size remaining as is.
On the left		⇦ button	The image position shifts to the left with the sized remaining as is.
At the top	V-SHIFT (vertical direction)	⇨ button	The image position shifts up with the size remaining as is.
At the bottom		⇦ button	The image position shifts down with the size remaining as is.

When the black line is at the right or left edge

SIZE SHIFT SETUP

▶ H-SHIFT	:	00	DOT(S)
V-SHIFT	:	00	LINE(S)
H-SIZE	:	896	DOTS
V-SIZE	:	464	LINES

H-SHIFT :
        00 DOT(S)

V-SHIFT :
        00 LINE(S)

When the black line is at the top or bottom

To clear the adjusted value
Press the MENU button from the SIZE SHIFT SETUP menu. The adjusted values are cleared and the values are reset to the original ones, then the PRINT-SETUP menu appears.

Note
When a black line still appears, even after adjusting H-SHIFT or V-SHIFT, change the printout size.

5 Press the EXEC button.
The adjusted results have been stored. The PRINT-SETUP menu appears.

6 Press the MENU button.
The regular screen appears.

To check the adjustment result
Store a new image and print it to check that no black frame appears on the printout, that the image is not partially cut, and that no black line appears.

MC-Service

Setting Up the Printer (continued)

Selecting the Operation Mode for Automatic Printing Capabilities

You can control the printer with either of the following options.
- RM-91 Remote Control Unit (not supplied): Connected to REMOTE 2 connector ("Making Connections to Enable Remote Control" page 48)
- FS-30 Foot Switch (not supplied): Connected to REMOTE 3 connector ("Making Connections to Enable Remote Control" page 48)

Using the menu, you can assign desired functions to the remote control unit connected to the REMOTE 2 connector, and to the switches of the foot switch connected to the REMOTE 3 connector.

In addition to the above, the printer can be remotely controlled by a pulse signal input to REMOTE 2 or REMOTE 3. (see pages 84 and 85)

Note

To control the printer remotely, set CAPTURE of the FUNCTION-SETUP menu to SINGLE. (see page 26)
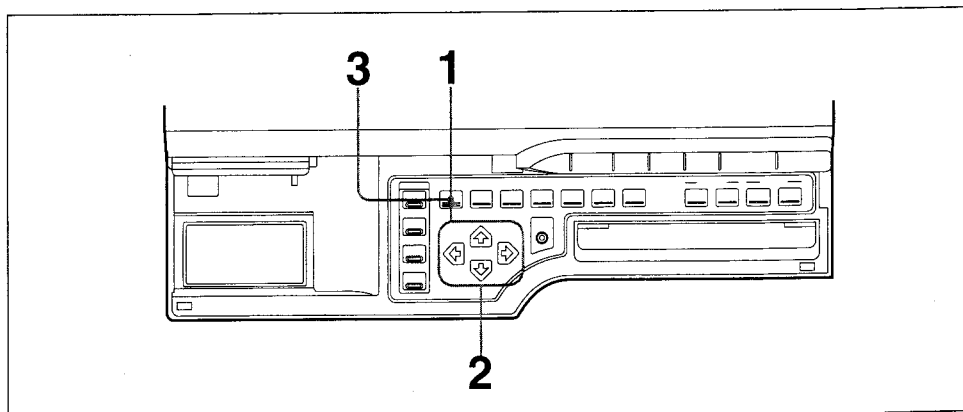
1 Press the MENU button, then select FUNCTION-SETUP by pressing the ⇦ or ⇨ button.

```
MENU
▶ SYS / PRN / FUNCTION-SETUP
  REMOTE2     :   C&PRINT   >
  REMOTE3A    :   PRINT     >
  REMOTE3B    : < BACK-SP   >
  REMOTE3C    : < CAP/SRC   >
  CLEAR       :   PART/ALL
  CAPTURE     :   SINGLE/SERIES
  TIMER       :   ON/OFF

  Q1   1/4   A                 S
```

Press the ⇦ or ⇨ button until
FUNCTION-SETUP appears.

```
FUNCTION  SETUP
SYS / PRN / FUNCTION
```

Press the ⇦ or ⇨ button until FUNCTION
appears

2 Select the remote control unit to which you want to assign a function.

① Select the remote control unit to which you want to assign a function by pressing the ⇧ or ⇩ button.

Remote control unit to which the function is assigned		Remote control unit name written on the menu
RM-91 connected to REMOTE 2		REMOTE 2
FS-30 connected to REMOTE 3	Button A of FS-30	REMOTE 3A
	Button B of FS-30	REMOTE 3B
	Button C of FS-30	REMOTE 3C

```
MENU
    SYS/PRN/FUNCTION-SETUP
▶REMOTE2    :    C&PRINT    >
 REMOTE3A   :    PRINT      >
 REMOTE3B   : < BACK-SP     >
 REMOTE3C   : < CAP/SRC     >
```

Position the cursor to the desired remote control unit by pressing the ⇧ or ⇩ button.

```
┌─────────────────────────┐
│ |REMOTE2|   :           │
│                         │
│             C&PRINT  >  │
└─────────────────────────┘
```

Press the ⇧ or ⇩ button until the desired remote control unit appears.

The figure shows the case where you want to assign a function to the remote control unit connected to REMOTE 2. You can select any remote control unit in the same way.

Continue to next page →

MC-Service

Setting Up the Printer (continued)

② Assign a function to the remote control unit selected in ① by using the ⇔ or ⇨ button.

Items to be selected	Operation
C & PRINT (CAPTURE & PRINT)	Storing an image to a memory page and printing a memory image. If you press the switch while printing is being performed, the selected image is queued, with the queued image being printed once printing has been completed.
CYCLIC-C (CYCLIC CAPTURE)	Storing images to memory pages cyclically whenever you press the switch. The printer continues to store images, replacing that previously stored with a new one.
CAP & STOP (CAPUTRE STOP)	Storing images to one memory page to another. Once images have been stored to all the memory pages, the printer stops storing images and the message HIT ANY KEY appears.
PRINT	Printing whenever you press the switch.
STOP	Stopping printing whenever you press the switch. An paper which is currently being printed will be ejected.
BACK-SP (BACK SPACE)	The pointer (green) returns to its former position whenever you press the switch.
POINTER+	The pointer (green) moves to the next position whenever you press the switch.
CAP/SRC (CAPTURE/SOURCE)	When the source image is displayed, the image is captured to memory whenver you press the switch. When the memory image is displayed, the source image appears whenever you press the switch.

```
MENU
  SYS/PRN/FUNCTION-SETUP
  REMOTE2    :  C&PRINT    >
  REMOTE3A   :  PRINT      >
▶ REMOTE3B   : < BACK-SP   >
  REMOTE3C   : < CAP/SRC   >
  CLEAR      : PART/ALL
  CAPTURE    : SINGLE/SERIES
  TIMER      : ON/OFF

  Q1   1/4   A                 S
```

```
REMOTE2    :
                C&PRINT  >
```

```
REMOTE3A   :
                PRINT       >
```

```
REMOTE3B   :
              <  BACK-SP  >
```

```
REMOTE3C   :
              <  CAP/SRC  >
```
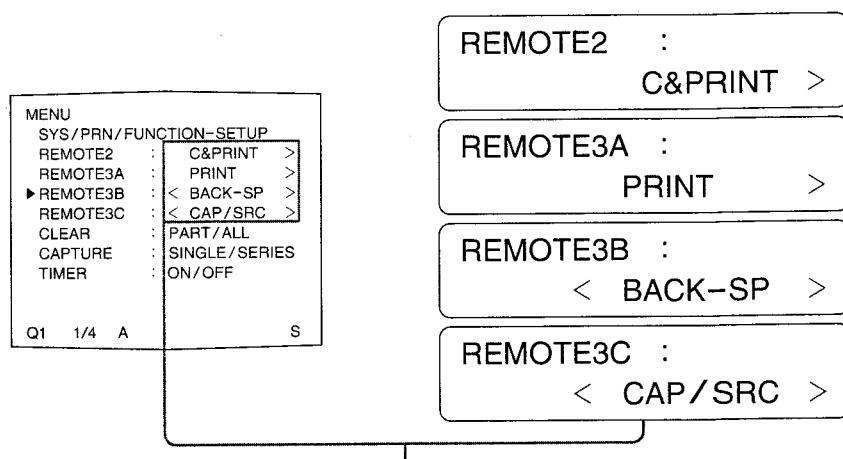
Display the desired function by using the ⇔ or ⇨ button.

When > is displayed, another function can be selected by pressing the ⇨ button.
When < and > are displayed, another function can be selected by pressing either the ⇔ or ⇨ button.

Assign functions to your remote control unit by repeating ① and ②.

3 Press the MENU button.
The regular screen appears.

Erasing the Screen Display

You can erase a screen display with the menu when, for example, it is hard to see the image that is hidden behind the screen display (C, Qn, A, and others). The printer operation is identical, regardless of whether screens are displayed. The same messages are displayed in the printer window display.
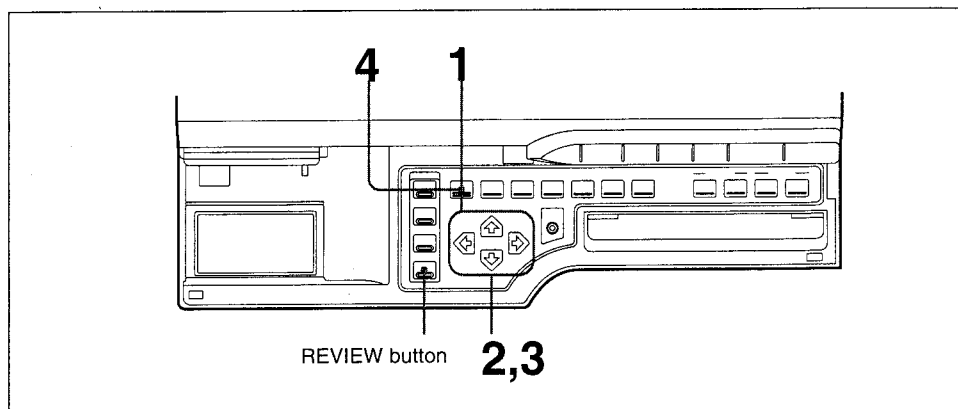
REVIEW button **2,3**

1 Press the MENU button, then select SYSTEM-SETUP by pressing the ⇦ or ⇨ button.

```
MENU
▶ SYSTEM-SETUP/ PRN/FUNC
  DISPLAY      : ON/OFF
  BEEP         : ON/OFF
  LCD          : ON/OFF
  LCD-CNTR     :  0    ······|·······
  BAUDRATE     : 12/24/48/9600
  MONITOR      : THRU/EE
  USER SET     : 1/2/3  [EXEC]

Q1  1/4  A                         S
```

Press the ⇦ or ⇨ button until
SYSTEM- SETUP appears.

```
SYSTEM  SETUP
 SYSTEM/ PRN/FUNC
```
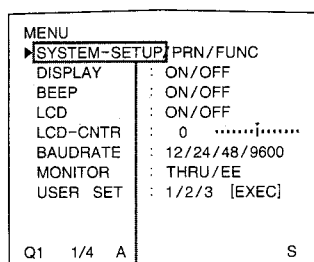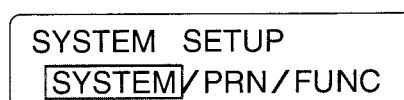
Press the ⇦ or ⇨ button until SYSTEM
appears.

2 Select DISPLAY by pressing the ⇧ or ⇩ button.

```
MENU
  SYSTEM-SETUP/PRN/FUNC
  DISPLAY      : ON/OFF
  BEEP         : ON/OFF
▶ LCD          : ON/OFF
```
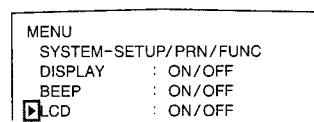
Position the cursor to DISPLAY by
pressing the ⇧ or ⇩ button.

```
LCD          :
                  ON/ off
```
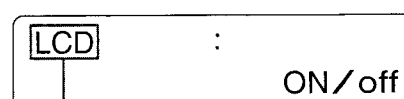
Press the ⇧ or ⇩ button until DISPLAY
appears.

Continue to next page →

MC-Service

Setting Up the Printer (continued)

3 Select OFF by pressing the ⇔ or ⇨ button.

```
MENU
  SYSTEM-SETUP/PRN/FUNC
▶ DISPLAY    : ON/OFF
  BEEP       : ON/OFF
. LCD        : ON/OFF
```

Switch OFF to green by pressing
the ⇔ or ⇨ button.

```
DISPLAY   :

              on/OFF
```
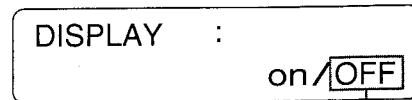
Display OFF in capital letters by pressing
the ⇔ or ⇨ button.

To display screen messages
Select ON in step **3**.

Note

If you set the printer output signal specification to THRU (through), screen
messages do not appear, even when you switch ON to green. However, error
messages can appear at any time.

4 Press the MENU button.
The regular screen appears.

To temporarily erase the monitor display
While the REVIEW button on the sub panel is held down, the screen display
disappears, even if DISPLAY is set to ON. Upon releasing the REVIEW button,
the screen display appears again.

Using the menu, you can erase the printer window display. Printer operation remains identical, regardless of whether messages are displayed in the printer window display. You can always view messages on the video monitor.
When it is hard to read the contents of the printer window display, adjust the brightness with the menu.

Erasing the printer window display

1 Press the MENU button, then select SYSTEM-SETUP by pressing the ⇦ or ⇨ button.

```
MENU
▶ SYSTEM-SETUP  PRN/FUNC
   DISPLAY       :  ON/OFF
   BEEP          :  ON/OFF
   LCD           :  ON/OFF
   LCD-CNTR      :  0   ······|······
   BAUDRATE      :  12/24/48/9600
   MONITOR       :  THRU/EE
   USER SET      :  1/2/3  [EXEC]

   Q1   1/4   A                    S
```

Press the ⇦ or ⇨ button until SYSTEM-SETUP appears.

```
SYSTEM  SETUP
 SYSTEM/ PRN / FUNC
```

Press the ⇦ or ⇨ button until SYSTEM appears.

2 Select LCD by pressing the ⇧ or ⇩ button.

```
MENU
   SYSTEM-SETUP/PRN/FUNC
   DISPLAY       :  ON/OFF
   BEEP          :  ON/OFF
 ▶ LCD           :  ON/OFF
```

Position the cursor to LCD by pressing the ⇧ or ⇩ button.

```
 LCD          :
                  ON/ off
```

Press the ⇧ or ⇩ button until LCD appears.

Continue to next page →

MC-Service

Setting Up the Printer (continued)

3 Select OFF by pressing the ⟵ or ⟶ button.

```
MENU
  SYSTEM-SETUP/PRN/FUNC
  DISPLAY    : ON/OFF
  BEEP       : ON/OFF
  ▶LCD       : ON/OFF
```

Switch OFF to green by pressing the ⟵ or ⟶ button.

```
LCD          :
                 on /OFF
```

Display OFF in capital letters by pressing the ⟵ or ⟶ button.

To display printer window display
Select ON in step **3**.

4 Press the MENU button.
The regular screen appears.

Adjusting the brightness of the printer window display

1 Press the MENU button, then select SYSTEM-SETUP by pressing the ⟵ or ⟶ button.

```
MENU
▶SYSTEM-SETUP PRN/FUNC
  DISPLAY    :  ON/OFF
  BEEP       :  ON/OFF
  LCD        :  ON/OFF
  LCD-CNTR   :  0    ······|······
  BAUDRATE   :  12/24/48/9600
  MONITOR    :  THRU/EE
  USER  SET  :  1/2/3  [EXEC]

  Q1   1/4   A                    S
```

Press the ⟵ or ⟶ button until SYSTEM-SETUP appears.

```
SYSTEM  SETUP
 SYSTEM / PRN / FUNC
```

Press the ⟵ or ⟶ button until SYSTEM appears.

2 Select LCD-CNTR by pressing the ⇧ or ⇩ button.

```
MENU
  SYSTEM-SETUP/PRN/FUNC
  DISPLAY      : ON/OFF
  BEEP         : ON/OFF
  LCD          : ON/OFF
 ▶LCD-CNTR    :  0    ·······┊········
```
Position the cursor to LCD-CNTR
by pressing the ⇧ or ⇩ button.

```
LCD - CNTR :          0
————————✳————————
```
Press the ⇧ or ⇩ button until LCD-CNTR
appears.

3 Adjust the brightness of the printer window display by pressing the ⇦ or ⇨ button.

```
MENU
  SYSTEM-SETUP/PRN/FUNC
  DISPLAY      : ON/OFF
  BEEP         : ON/OFF
  LCD          : ON/OFF
 ▶LCD-CNTR    : 2    ·······┊·┊·····
```

```
LCD - CNTR :          2
————————+—✳—————
```

The number increases and the contrast increases every time the ⇨
button is pressed.
The number decreases and the contrast decreases every time the
⇦ button is pressed.

4 Press the MENU button.
The regular screen appears.

MC-Service

Setting Up the Printer (continued)

Whenever you press a button on the front panel or sub panel, the operation tone sounds (one time). When an error occurs, the alarm tone sounds (three times). You can turn these tones on and off with menu.
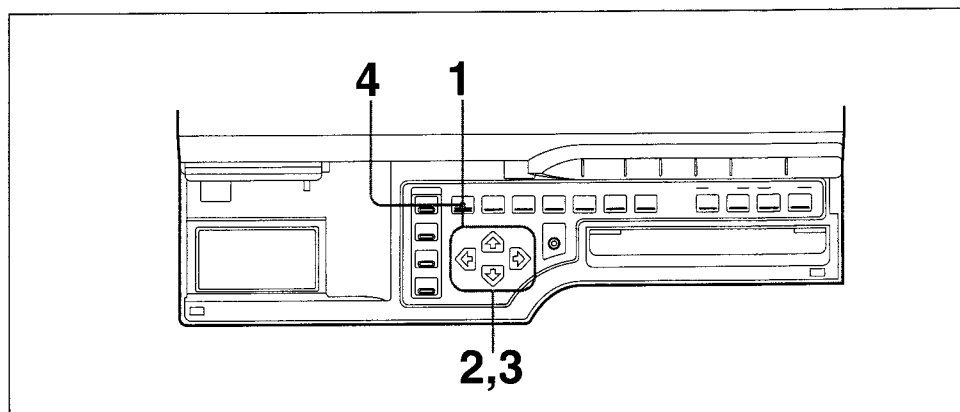
1 Press the MENU button, then select SYSTEM-SETUP by pressing the ⇦ or ⇨ button.
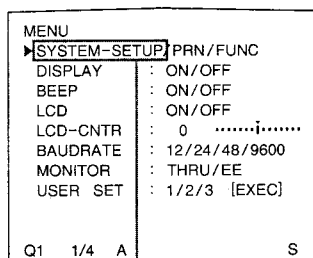
```
MENU
▶SYSTEM-SETUP│PRN/FUNC
  DISPLAY      :  ON/OFF
  BEEP         :  ON/OFF
  LCD          :  ON/OFF
  LCD-CNTR     :  0    ······│·······
  BAUDRATE     :  12/24/48/9600
  MONITOR      :  THRU/EE
  USER SET     :  1/2/3  [EXEC]

Q1   1/4   A                  S
```

Press the ⇦ or ⇨ button until
SYSTEM- SETUP appears.

```
SYSTEM  SETUP
│SYSTEM│/ PRN / FUNC
```
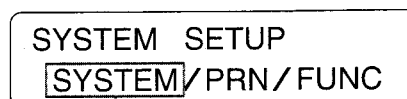
Press the ⇦ or ⇨ button until SYSTEM
appears.

2 Select BEEP by pressing the ⇧ or ⇩ button.

```
MENU
  SYSTEM-SETUP/PRN/FUNC
  DISPLAY      :  ON/OFF
▶│BEEP         :  ON/OFF
  LCD          :  ON/OFF
```
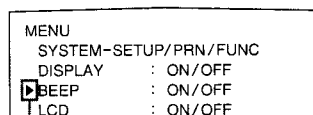
Position the cursor to BEEP by
pressing the ⇧ or ⇩ button.

```
│BEEP│        :
              ON / off
```
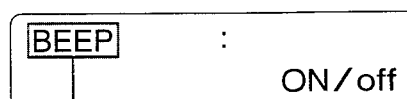
Press the ⇧ or ⇩ button until BEEP
appears.

3 Select whether the operation and error tones sound by pressing the ⇦ or ⇨ button.

```
MENU
  SYSTEM-SETUP/PRN/FUNC
  DISPLAY    : ON/OFF
▶ BEEP       : ON/OFF
  LCD        : ON/OFF
```

Switch the desired operation to green by pressing the ⇦ or ⇨ button.

```
BEEP        :
                 ON/off
```

Display the desired operation in capital letters by pressing the ⇦ or ⇨ button.

When selecting	Selection
To sound the tones	ON
To disable the tones	OFF

4 Press the MENU button.
The regular screen appears.

Setting the Baud Rate for Computer Communication

When controlling the printer with a computer connected to the printer's RS-232C connector, select the appropriate baud rate. For details, contact your nearest Sony dealer.

1 Press the MENU button, then select SYSTEM-SETUP by pressing the ⇦ or ⇨ button.

```
MENU
▶ SYSTEM-SETUP/PRN/FUNC
  DISPLAY    : ON/OFF
  BEEP       : ON/OFF
  LCD        : ON/OFF
  LCD-CNTR   :  0  ......i.......
  BAUDRATE   : 12/24/48/9600
  MONITOR    : THRU/EE
  USER SET   : 1/2/3  [EXEC]

  Q1   1/4   A              S
```

Press the ⇦ or ⇨ button until SYSTEM-SETUP appears.

```
SYSTEM  SETUP
  SYSTEM/PRN/FUNC
```

Press the ⇦ or ⇨ button until SYSTEM appears.

MC-Service

Setting Up the Printer (continued)

2 Select BAUDRATE by pressing the ⇧ or ⇩ button.

```
▶BAUDRATE   : 12/24/48/9600
  MONITOR    : THRU/EE
  USER SET   : 1/2/3  [EXEC]

Q1   1/4   A                    S
```

Position the cursor to BAUDRATE by pressing the ⇧ or ⇩ button.

```
┌─────────────────────────────┐
│ BAUDRATE :                  │
│            12/24/48/9600    │
└─────────────────────────────┘
```

Press the ⇧ or ⇩ button until BAUDRATE appears.

3 Select the desired baud rate by pressing the ⇦ or ⇨ button.

```
▶BAUDRATE   : 12/24/48/9600
  MONITOR    : THRU/EE
  USER SET   : 1/2/3  [EXEC]

Q1   1/4   A                    S
```

Switch the desired baud rate to green by pressing the ⇦ or ⇨ button.

```
┌─────────────────────────────┐
│ BAUDRATE :                  │
│            12/24/48/9600    │
└─────────────────────────────┘
```

Display the desired baud rate in capital letters by pressing the ⇦ or ⇨ button.

Baud rate (bps)	Baud rate displayed on the menu. (The display changes from upper-two digit indication to spelled-out indication.)
1200	12 → 1200
2400	24 → 2400
4800	48 → 4800
9600	96 → 9600

4 Press the MENU button.
The regular screen appears.

You can store up to three settings of all the printer specifications, set or adjusted by using the buttons or with the menu, and store those settings as a user set. The printer retains these setting - even if you turn off the power.

Thus, different operators can make printouts with different settings by recalling the appropriate user set.

If the data of the recalled user set is modified, the printer operates according to the modified data. In such a case, the modified data remains effective until another user set is recalled with the USER PRESET button, even if you turn off the power.
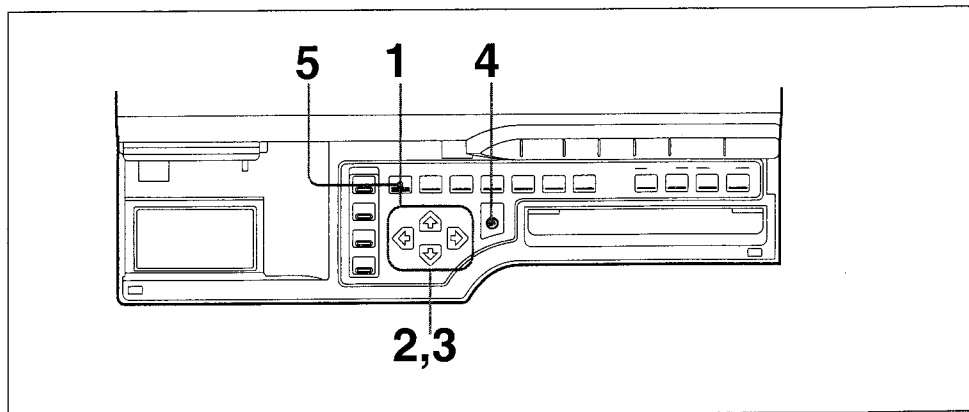
1 Press the MENU button, then select SYSTEM-SETUP by pressing the ⇦ or ⇨ button.
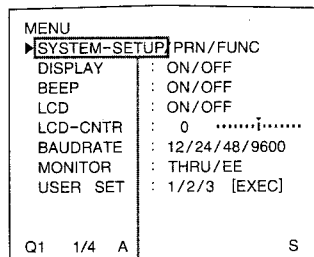
```
MENU
▶SYSTEM-SETUP  PRN/FUNC
  DISPLAY      :  ON/OFF
  BEEP         :  ON/OFF
  LCD          :  ON/OFF
  LCD-CNTR     :  0   ......|......
  BAUDRATE     :  12/24/48/9600
  MONITOR      :  THRU/EE
  USER  SET    :  1/2/3  [EXEC]

Q1   1/4   A                    S
```

Press the ⇦ or ⇨ button until SYSTEM- SETUP appears.

```
┌─────────────────────────┐
│  SYSTEM  SETUP          │
│  ┌──────┐              │
│  │SYSTEM│/PRN/FUNC     │
│  └──────┘              │
└─────────────────────────┘
```
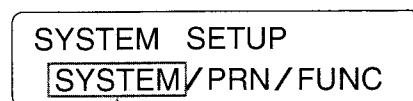
Press the ⇦ or ⇨ button until SYSTEM appears.

2 Select USER SET by pressing the ⇧ or ⇩ button.

```
  MONITOR    :  THRU/EE
▶USER  SET   :  1/2/3  [EXEC]

Q1   1/4   A                  S
```
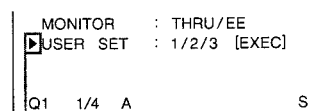
Position the cursor to USER SET by pressing the ⇧ or ⇩ button.

```
┌─────────────────────────┐
│ ┌──────────┐            │
│ │USER  SET │ :          │
│ └──────────┘            │
│              1/-/-      │
└─────────────────────────┘
```
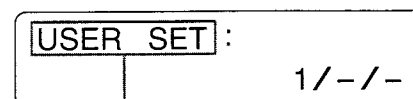
Press the ⇧ or ⇩ button until USER SET

Continue to next page →

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3 Select the desired user set number by pressing the ⇦ or ⇨ button.

```
┌─────────────────────────────┐
│  MONITOR   : THRU/EE        │
│ ►USER SET  :│1/2/3│[EXEC]   │
│                             │
│  Q1   1/4  A            S   │
└─────────────────────────────┘
```
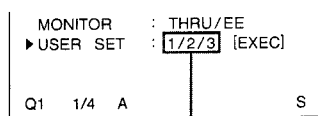
Switch the desired user set number to green by pressing the ⇦ or ⇨ button.

```
┌──────────────────────────────┐
│  USER  SET :                 │
│                    │-/2/-│   │
└──────────────────────────────┘
```
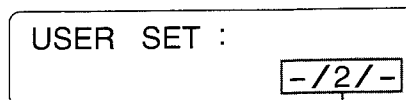
Display the desired user set number with spelled-out by pressing the ⇦ or ⇨ button.

4 Press the EXEC button.
All data currently set and adjusted are registered in the user set selected in step **3**.

5 Press the MENU button.
The regular screen appears.

To recall the user set and print

Select the desired user set by pressing the USER PRESET button. Each time you press the USER PRESET button, the user sets are recalled in the order of 1, 2, 3, 1....
Then, press the EXEC button to execute the selected user set.
The printer operates according to the recalled user set. If you modify the set value, the printer operates according to the modified data until you recall another user set.

Note
If the user set is changed, the image in memory will be cleared.

To retain the originally set value

Example: Modify the settings made for user set 1. Retain the original settings of user set 1 and register the modified set values as user set 2.

1 Select user set 1 by pressing the USER PRESET button.
Each time you press the USER PRESET button, the user sets are recalled in the order of 1, 2, 3, 1....

2 Press the EXEC button to execute the selected user set.

Note
If the user set is changed, the image in memory will be cleared.

3 Modify the recalled set values.

4 Select 2 of USER SET on the SYSTEM-SETUP menu.

5 Press the EXEC button.
The set values, modified in step **3**, are registered as user set 2.

To copy the existing user set

You can copy an existing user set to another user set number.

1 Select the source user set number by pressing the USER PRESET button.

2 Press the EXEC button to execute the selected user set.

Note

If the user set is changed, the image in memory will be cleared.

3 Select the target user preset number with USER SET on the SYSTEM-SETUP menu.

4 Press the EXEC button.
The set values of the source user set, selected in step **1**, are copied to the target user set number selected in step **3**.

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Precautions

Safety

- Operate the printer using the power source specified in "Specifications" (page 83)
- Be careful not to damage the power cable by placing or dropping heavy objects on it; it is dangerous to use the unit with a damaged power cable.
- If you do not intend to use the unit for a long time, disconnect the power cable.
- Unplug the power cable by grasping the plug, not the cable itself.
- Do not disassemble the unit.
- Do not remove the cover. There is a danger of electric shock from the internal parts.
- Be careful not to spill water or other liquids on the unit, or to allow combustible or metallic material to enter the cabinet. If used with foreign matter in the cabinet, the unit is liable to fail, or present a risk of fire or electric shock.
- Ventilation holes are provided to prevent the unit from overheating. Be careful not to obstruct them with other units or by covering the unit with a cloth etc.
- If the unit malfunctions or if a foreign body falls into the cabinet, disconnect the power immediately and consult your Sony service facility or your Sony dealer.

Installation

- Avoid placing the unit in a location subject to:
  - mechanical vibration
  - high humidity
  - excessive dust
  - direct or excessive sunlight
  - extremely high or low temperatures
- Do not use other electronic equipment near the unit. The unit will not work properly in strong electromagnetic fields.

Condensation

- If the printer is subject to wide and sudden changes in temperature, such as when it is moved from a cold room to a warm room or when it is left in a room with a heater that tends to produce large amounts of moisture, condensation may form inside the printer. In such cases the printer will probably not work properly, and may even develop a fault if you persist in using it. If condensation forms, turn off the power and leave the printer to stand for at least one hour.
- If the printing pack is subjected to wide and sudden changes in temperature, condensation may form on the ink ribbon or paper. This will cause the printer to malfunction. Also, if the printing pack is used in this state, spots are likely to appear on the printout. Therefore, avoid storing the printing pack in locations subject to wide and sudden changes of temperature.
- To store a half-used printing pack, replace it in its original packing and reseal the package. If possible, keep the sealed printing pack in a cool, dark location. To subsequently use the printing pack, place it, in its sealed package, in a warm room for several hours. Doing so prevents condensation from forming when the printing pack is removed from its package.

Location

To prevent internal heat built-up, leave enough room around the printer for air to circulate through the vents on the left hand side of the cabinet.

Vents
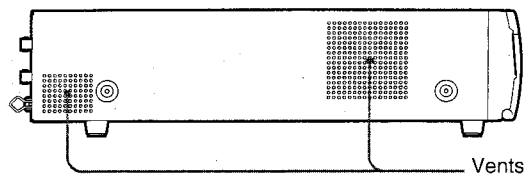
On transportation

Do not transport the printer with the supplied accessories. Doing so may cause malfunction.

Cleaning

Clean the cabinet, panel and controls with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which may damage the finish.

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Error/Warning Messages

There are two kinds of messages: error messages and warning messages. This section lists these messages in alphabetical order, together with their possible causes and remedies. Note the message and act accordingly.

Error messages

If a problem occurs, the ALARM lamp lights in orange and an error message stating the problem appears on the monitor and in the printer window display.

Error messages	Possible causes and remedies
NO PAPER	The paper has been exhausted. → Load paper into the paper tray. (see page 11)

NO RIBBON	• The ink ribbon is crumpled in the ink ribbon holder.
	  → Remove the ink ribbon cartridge and reload the ink ribbon into the ink ribbon holder. (see page 8)
	• The ink ribbon has been torn.
	  → Repair the tear with transparent tape. (see page 10)
	• The ink ribbon cartridge is loaded into the printer, but the ink ribbon has not been loaded into the ink ribbon holder.
	  → Load the ink ribbon into the ink ribbon holder and reload it. (see page 8)

NO RIBBON AND PAPER	The ink ribbon cartridge is loaded in the printer, but the ink ribbon has not been loaded into the rink ribbon holder, and no paper has been loaded into the paper tray. → Load the ink ribbon into the ink ribbon holder, then load the ink ribbon cartridge, and load the paper into the paper tray. (see pages 8 and 11)
PAPER JAMMING	The paper has jammed. → Remove any jammed paper from the printer. (see page 88)
REMOVE PAPER	The maximum number of printouts has accumulated on the paper cover. → Remove the printouts from the paper cover.
PAPER MISMATCH	The ink ribbon and paper are not compatible. → Use a valid combination of paper and ink ribbon. (see page 82)
RIBBON END	The ink ribbon has been exhaused → Fit a new ink ribbon. (Ink ribbons cannot be reused.) (see page 8)
SENSOR MOTOR TROUBLE	Sensor trouble or motor trouble has occurred. → Turn off the power immediately and contact your Sony service facility or your Sony dealer.

If the message is not cleared, even after performing the above steps
If, after completing the steps given in the above list, the message is not cleared from the video monitor, turn the printer power off, then back on gain. This should allow the printer to again be operated normally.

Warning messages

In the case of a warning, only warning messages appear. The ALARM lamp does not light.

Warning message	Possible causes and remedies
BUSY PRINTING	The printer is printing, preventing any other operation. → Wait until the printer finishes printing, then retry the operation.
HEAD IN COOLING	The thermal head has overheated. → Leave the printer until the head cools down and this message disappears.
HIT ANY KEY.	This message appears when the remote control unit is used in CAPTURE STOP mode and when the printer stops storing images to memory pages once images have been stored to all memory pages. → Press any button. Printer operation is enabled after this.
INPUT MISMATCH (displayed on the regular screen) MENU INPUT MISMATCH (displayed on the menu screen)	The TV system of the signal input from the source equipment (VTR, video camera and so on) is not compatible with the TV system selected by the NTSC/PAL switch of the printer. → Check the NTSC/PAL selector setting, and set it correctly.
MEMORY BUSY	The image stored in the selected memory page is being printed or printing is queued. → Retry the operation once the printer finishes printing.
NO INPUT (displayed on the regular screen) MENU NO INPUT (displayed on the menu screen)	The printer is not receiving an input signal. → Set the INPUT SELECT settings correctly. (see page 13) → Check whether the video equipment is outputting a video signal. → Check that the connections between signal source equipment and the printer are secure. (see page 46)
No image in page	No image is stored in the selected memory page. → Store the image into memory page, then press the PRINT button again. (see page 17)
Not enough memory...	The NTSC/PAL selector is set to PAL. To use the printer in NTSC mode, set the NTSC/PAL selector to NTSC. When you change the selector setting, turn the power off, then back on again. To use the printer in PAL mode, mount the UPK-5001NP to increase the memory capacity.

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If the paper jams

If the paper jams after pressing the PRINT button, the message "PAPER JAMMING" appears on the video monitor and in the printer window display. Follow the steps below to remove the jammed paper.

1 Open the front panel.
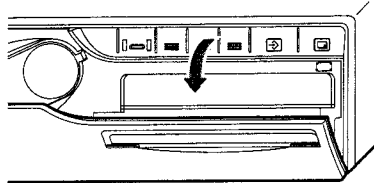
2 Remove the paper cover.
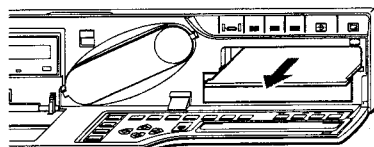
If any printouts have been ejected to the paper tgray, remove them before removing the paper tray.

3 Check whether any paper is jammed inside the printer. If you find a jammed sheet, slowly pull it into the printer tray.
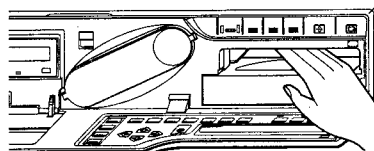
Note
Never attempt to pull a jammed sheet down, up, backwards, or forwards; the sheet may tangle or tear.

4 Remove the paper tray.
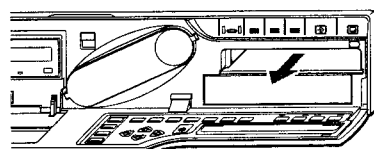
5 Load the paper into the paper tray correctly.

Notes
• Do not reuse the paper put back in step **3**. Discard that paper.
• Use only paper recommnded in this manual.

Set the paper securely under the tab.
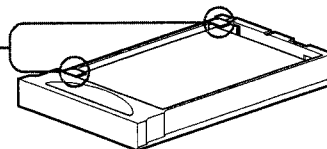
6 Reinsert the paper tray and paper cover, then close the front panel.

Troubleshooting

The following troubleshooting checks will help you correct the most common problems you may encounter with your unit. Before proceeding with these trouble checks, first check that the power cord is firmly connected. Should the problem persist, unplug the unit and contact your Sony dealer or local authorized Sony service facility.

Symptoms	Possible causes and remedies
Nothing appears on the monitor.	• The POWER switch of the printer is not set to ON. → Set the POWER switch of the printer to ON. • The POWER switch of the monitor is not set to ON. → Set the POWER switch of the monitor to ON. • Connections may not be correct. → Check connections and rectify, if necessary. (see page 46)
No message appears on the regular screen.	If an incorrect sync signal is input, nothing may appear on the monitor. → In this case, first check the monitor by pressing the SOURCE/MEMORY button to display the image stored in memory. If an image appears, the monitor is working correctly. Select another input signal by using the INPUT SELECT button (see page 13) Or, set the connected video equipment to playback mode, if it is currently set to another mode such as stop mode.
No message or image appears on the regular screen.	If an image stored in memory appears when the SOURCE/MEMORY button is pressed, MONITOR on the SYSTEM-SETUP menu is set to THRU. → Change the MONITOR setting to EE. (see page 54)
The printer does not print.	• An error message appears on the display. (see page 86) → Perform the steps described in "Error Messages" on page 86. • Paper that cannot be used with the printer has been loaded. → Load the correct paper. (see page 82) Use only ink ribbon and paper for this printer. • The paper is not loaded correctly. → Check which side of the paper is the printing side, then load the paper again. (see page11).
A black line appears on the printout.	Any portion for which there is no signal is printed in black. → Shift the printout area. Store a new image and print it. (see page 63)
The printer produces a printout with black frame.	Any portion for which there is no signal is printed in black. → Make the printout narrower. Store a new image and print it. (see page 63)
The printed image is partially cut out.	Only part of the video signal has been stored. → Make the printout size wider. (see page 63) Store a new image and print it.
The printout is blurred.	A quickly moving image has been stored. → Set MOTION CORRECT mode to MOTION CORRECT ON by pressing the MOTION CORRECT button, and print that image again. (see page 16)
The image displayed on the video monitor is whitish.	The 75-ohm termination switch is set to OFF. → Set the 75-ohm termination switch to ON. (see page 46)
The printout color is very pale.	The paper is not loaded correctly. → Check which side of the paper is the printing side, then load the paper again. (see page 11).

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For details, refer to the pages given in parentheses.

Front
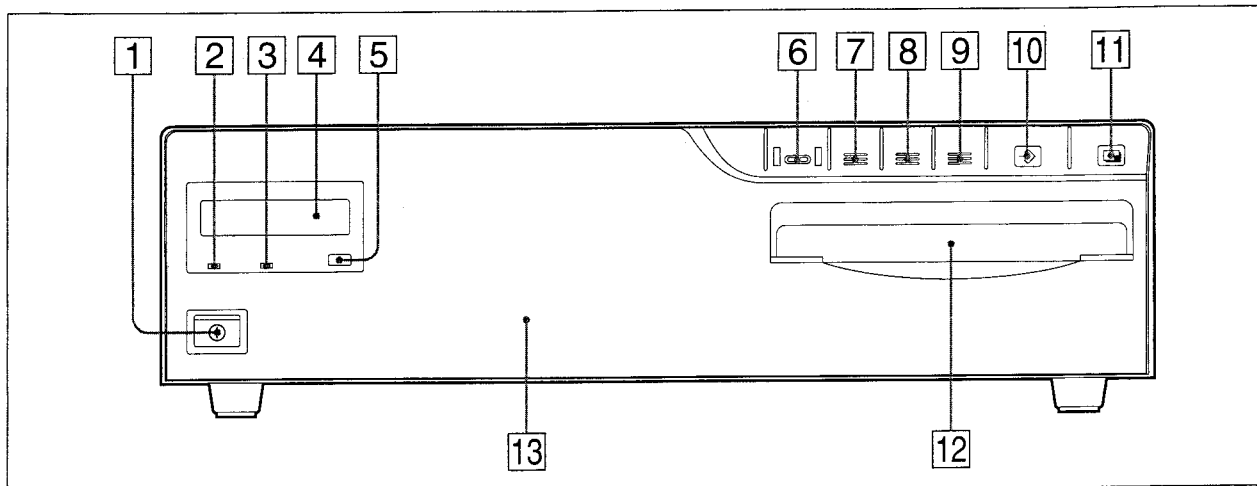
1 ① **POWER switch (13)**
Press to turn the printer on or off.

2 **PRINT lamp**
Lights while the printer is printing.

3 **ALARM lamp (86)**
Lights in orange when the ink ribbon or paper is exhausted, the paper jams, or another problem occurs.

4 **Printer window display (71, 94)**
Displays the messages that also appear along bottom edge of the monitor screen. Also displays the menu screen line to which the cursor is positioned. If an error occurs, a corresponding error message is displayed. The printer window display can be cleared with the SYSTEM-SETUP menu.

5 **Remote sensor (45)**
Aim the head of the remote control unit toward this sensor.

6 C **CLEAR button (38, 40, 41)**
Press this button to clear the images stored in the memory pages. Which images that can be cleared with the CLEAR button depends on the setting made with the FUNCTION-SETUP menu.

7 ◁≫ **MEMORY PAGE button (21, 24)**
Press to select the memory page.

8 ◈ **SOURCE/MEMORY button (16, 28, 51)**
Press to select which signal is to be output to the monitor.
The memory image and source image are toggled each time you press this button.

9 ◁ **BACK SPACE button (29)**
Press this button to move the cursor (green *) back to the former position, such as when you are storing multiple reduced images. Each time you press the BACK SPACE button, the cursor moves back one space.

10 ◇ **CAPTURE button (16, 18, 21, 28, 32, 33)**
Press to store an image to a memory page.

11 ▢ **PRINT button (16, 18, 21, 29, 32, 37)**
Press to make a printout.

12 **Paper ejection slot**
The printout is ejected here.

13 Front panel (8)

Pull the top on the front door toward you to
open it.
Opening the front panel reveals the sub panel
buttons, ink ribbon cartridge, paper tray, paper
cover and so on.

When the front panell is open.
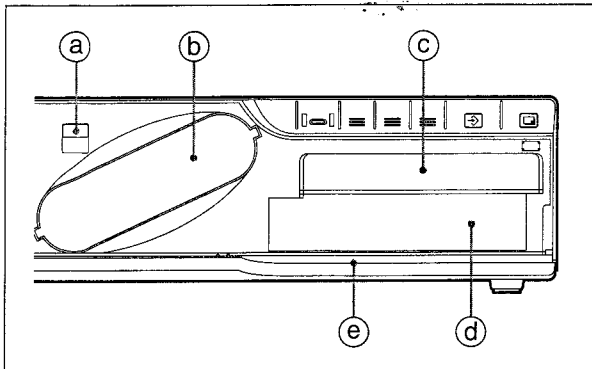
ⓐ **EJECT button (8)**
Push to eject the ink ribbon cartridge.

ⓑ **Ink ribbon cartridge compartment (8)**
Insert the ink ribbon cartridge (the ink ribbon
holder loaded with an ink ribbon)

ⓒ **Paper tray (11)**
Load paper into this tray.

ⓓ **Paper cover (11)**
Paper is ejected onto this cover.

ⓔ **Sub panel buttons**
For a detailed explanation of the sub panel
buttons, see the following "Sub Panel".

Sub Panel
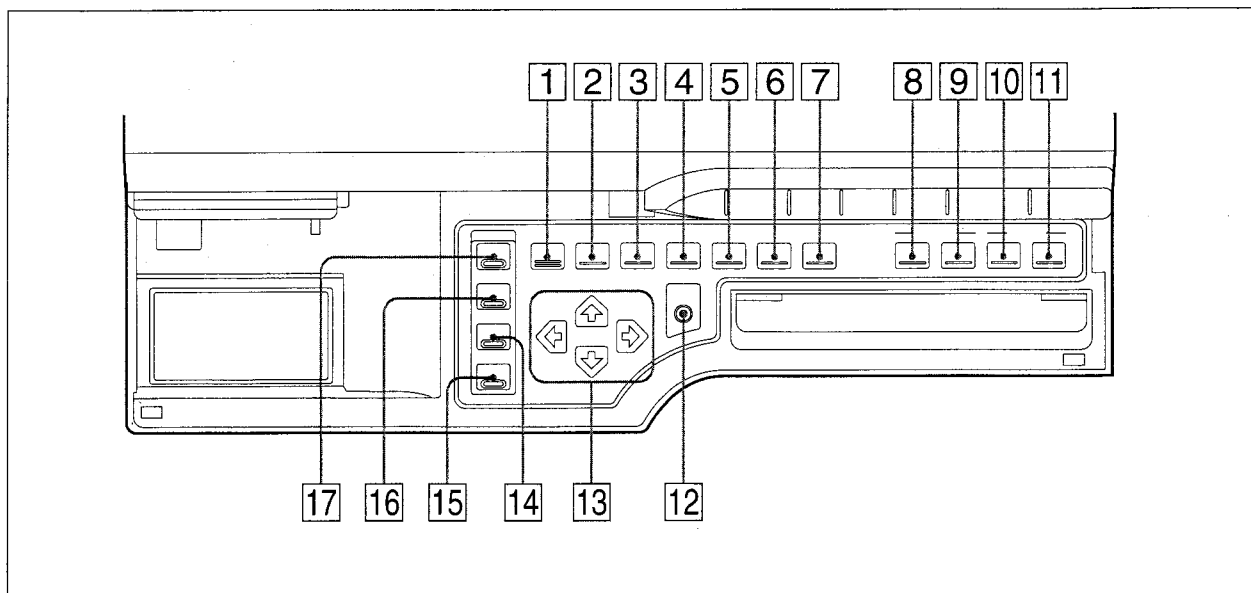
1 MENU button (25)

Press this button to display or clear the menus
on the screen and printer window displays.

2 USER PRESET button (18, 78)

Press this button to recall a registered user set.
Pressing this button causes the currently
selected user set to be is displayed for two or
three seconds. To recall another user set,

release the button while the desired user set
number is displayed. Each time you press this
button, user set is switched in the order of 1, 2
3.

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3 **MULTI PICTURE button (22, 33)**
Press this button to select the desired printout type. When you press this button, the currently selected printout type is displayed for two or three seconds. Each time you press this button, the type is switched in the order of 1, 2, 4, 8, 16, 1....

4 **PRINT QTY (quantity) button (19)**
Press this button to set the number of copies. You can set any number up to 9. You can change the number even when the printer is printing.

5 **RIBBON REMAIN button (20)**
Press this button to display the type and the number of printouts that can still be made on the regular screen. Not to display them, press this button again.

6 **INPUT SELECT button (13)**
Press this button to select the input signal. When you press this button, the currently selected input signal is displayed for two or three seconds. To select the input signal, release the button while the desired input signal is displayed. Each time you press this button, the input signal is switched in the order of RGB, S-VIDEO, VIDEO, RGB...

7 **DISPLAY P IN P button (26)**
Press this button to display the source image on part of the memory image.

8 **CAPTION INPUT button (35)**
Press this button to display or clear the caption input menu.

9 **CAPTION ON/OFF button (37)**
Used to determine whether a caption is printed on the printout. To make a printout with a caption, press this button to display CAPTION ON. To make a printout without a caption, press this button to display CAPTION OFF.

10 **MOTION CORRECT button (16, 29)**
Press this button to display MOTION CORRECT ON so as to make a printout with no blur if the memory image produces a blurred printout. The printout resolution, however, is slightly degraded.

11 **MOTION CHECK button (29)**
Press this button to check whether the image stored in memory was moving when you stored two- or four-reduced images. Also, this button is used to enter a caption.

12 **EXEC button (18, 35, 62, 64, 65, 78)**
Press this button to execute the values set with the COLOR ADJUST menu or to register a user set to the SYSTEM-SETUP menu. Also, this button is used to enter the characters of a caption.

13 **Cursor keys (25)**
Use to select a desired item from the menu by pressing the ⇧ or ⇩ button and set the value by pressing the ⇦ or ⇨ button.
Also, these keys are used to position the cursor (green) on the regular screen.

14 **ANALOG button (52, 55)**
Press this button to display or clear he ANALOG SETUP menu.

15 **REVIEW button (17, 62, 70)**
Press this button to temporarily clear the monitor display. While this button is held down, the monitor display is cleared.

16 **R/G/B/D/L button (59)**
Press this button to display or clear the COLOR ADJUST SETUP menu.

17 **PRESET button (62)**
Press this button to recall the set values for the printout color (color intensity and color contrast). Pressing this button causes the currently selected input signal to be displayed for two or three seconds. To select the input signal, release the button while the desired PRESET number is displayed.
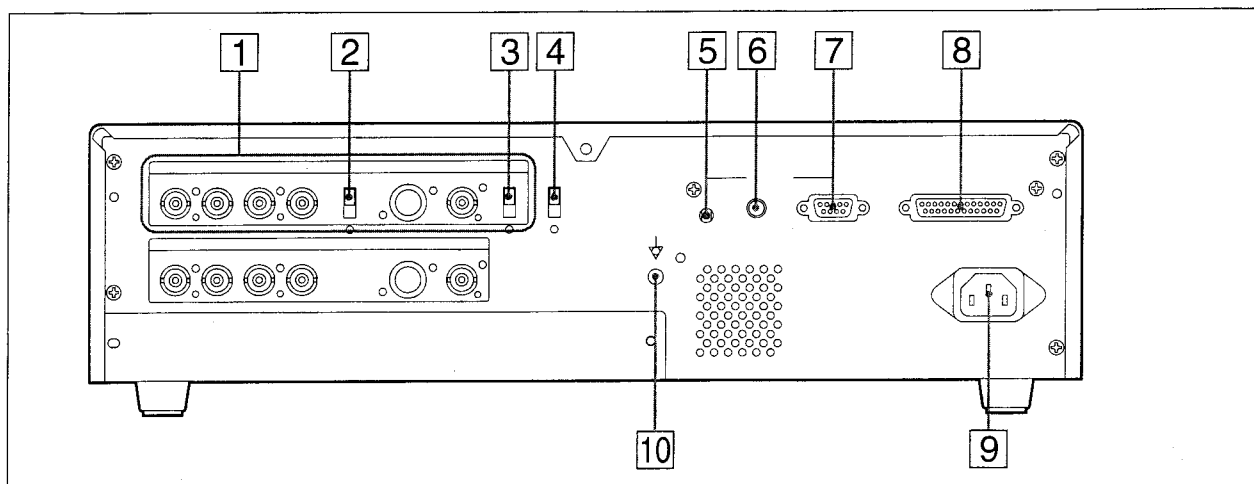
1 **INPUT (input signal) connectors (46)**
Used to connect the video equipment
supplying the source image.

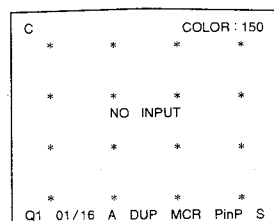| Connector	Connectable equipment
S-VIDEO	Video equipment with Y/C separated output connector.
VIDEO	Video equipment with composite video signal output connector
RGB SYNC	Video equipment with RGB/SYNC output connectors.

Refer to "Important safeguards/notices for use
in the medical environments" on page 2.

2 **75ΩON/OFF termination switch (for RGB input) (46)**
Normally, set this switch to ON. Set it to OFF
if the input signal should drop when you
connect additional equipment to the video
equipment.

3 **75ΩON/OFF termination switch (for NTSC composite video signal in NTSC mode and PAL composite video signal in PAL mode) (46)**
Normally, set this switch to ON. Set it to OFF
if the input signal should drop when you
connect additional equipment to the video
equipment.

4 **NTSC/PAL (NTSC/PAL TV) selector (46, 47)**
Set this selector according to the TV system of
the input signal. If you change this setting,

turn the printer power off, then back on again.

Selector position	When setting
NTSC	The NTSC system video equipment is connected.
PAL*	The PAL system video equipment is connected.

* To use the printer in PAL mode, the UPK-5501NP
  memory board should be installed. For details, contact
  your nearest Sony dealer. If the UPK-5501NP is not
  installed in the printer, "Not enough memory" will appear
  in PAL mode.

5 **REMOTE 1 connector (special mini jack) (48)**
Used to connect the RM-5500 Remote Control
Unit (not supplied)

6 **REMOTE 2 connector (stereo mini jack) (48, 84)**
Used to connect the RM-91 Remote Control
Unit (not supplied) or input remote control
pulse signals for automatic printing.

7 **REMOTE 3 connector (D-SUB 9-pin) (48, 85)**
Used to connect the FS-30 Foot Switch (not
supplied) or input remote control pulse signals
for automatic printing.

8 **RS-232C connector (48)**
Used to connect the computer used to control
the printer. For details, contact your nearest
Sony dealer.

Others | 93

Location and Function of Parts and Controls (continued)

9 **∿AC IN connector (46)**
Used to connect the printer to a wall outlet with the supplied power cord.

10 **Equipotential ground terminal connector ⩜**
Used to connect to the equipotential plug to bring the various parts of a system to the same potential.
Refer to "Important safeguards/notices for use in the medical environment" on page 2.

11 **OUTPUT connectors (46)**
Used to connect the video monitor.

Connector	Connectable equipment
S-VIDEO	Video equipment with Y/C separated output connector.
VIDEO	Video equipment with composite video signal output connector
RGB SYNC	Video equipment with RGB/SYNC output connectors.

Refer to "Important safeguards/notices for use in the medical environment" on page 2.

Comparing Printer Window Display with the Video Monitor Display

You can operate the printer using either the printer window display or the monitor screen display. Although the printer window display has a narrower display range and can show only a limited number of characters, the displayed contents and operations are the same as those of the monitor display. Use whichever method you prefer.
A brief explanation of the printer window display is given below, in comparison with the monitor screen.

Regular screen

```
 C              COLOR : 150
     *      *      *      *

     *      *      *      *
           NO  INPUT
     *      *      *      *

     *      *      *      *
 Q1  01/16  A  DUP  MCR  PinP  S
```

MCR, P in P and DUP are displayed only on the monitor screen.

```
 NO  INPUT
 Q1  01/16  A            S
```

Displays the bottom line of the monitor screen.

Menu screen

```
 MENU
   SYSTEM-SETUP/PRN/FUNC
   DISPLAY      : ON/OFF
   BEEP         : ON/OFF
   LCD          : ON/OFF
   LCD-CNTR     :  0  ·······|·······
 ▶ BAUDRATE     : 12/24/48/9600
   MONITOR      : THRU/EE
   USER  SET    : 1/2/3  [EXEC]


 Q1  01/16  A                  S
```
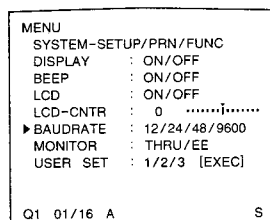
```
 BAUDRATE :
           12/24/48/9600
```

Displays the item to which the cursor is positioned on the monitor display.

CAPTION menu screen

```
 CAPTION                OFF
 S A M P L E 1 2 3 ■ _ _ _ _ _ _ _ _ _ _
 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
   A B C D E F G H I J K L M N
   O P Q R S T U V W X Y Z SHIFT
   0 1 2 3 4 5 6 7 8 9 + - = %
   ' " , . : ; ( ) [ ] { } < >
   ! ? & / * # $ ¥ £ @ ~ ! ' ^
   ↑ ↓ ← →  SPACE  BACK SPACE
```
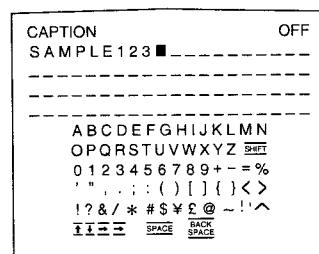
There are two types of display: the regular screen display and menu screen display. The two types of display are explained using the monitor display.

Regular screen display

When you first turn on the printer, the regular screen message appears.
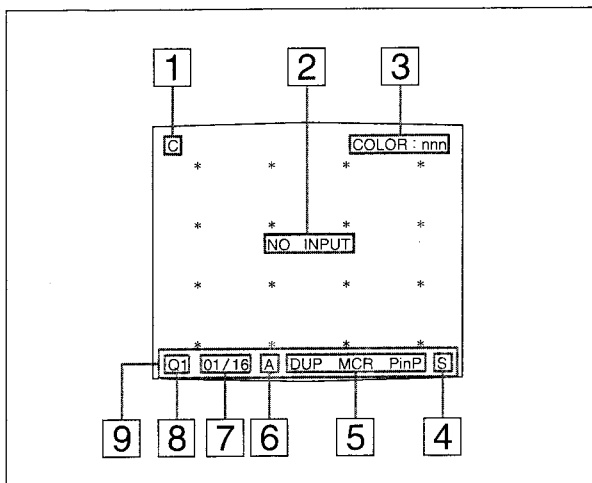
[1] **C (Caption) display section**
C is displayed in white when the printer is set to print a caption consisting of the date and/or comments.

[2] **Message display section**
Messages are displayed.

[3] **Ink ribbon type and remaining amount of ink ribbon display section**
Displays the ink ribbon type and remaining amount of ribbon (indicates the number of printouts that can still be made with the ribbon) when the RIBBON REMAIN button is pressed to set it to on.

[4] **S or M (image type) display section**
This indicates the type of image being displayed on the monitor screen.
S (Source): The image from the input signal source is displayed on the screen.
M (Memory): The image stored in memory is displayed on the screen.

[5] **Printer operation specification display section**
DUP (copy function), MCR (MOTION CORRECT ON mode) and P in P (function to

display the source image over part of memory image) are displayed according to the printer specification set with the menu and buttons.

[6] **Memory page display section**
Indicates the currently selected memory page. While the image in the memory page is being printed, the memory page indication blinks. The memory page whose memory image is queued to be printed lights in green.

[7] **Printout type display section**
Displays the selected printout type. When the printer is set to store multiple reduced images into memory, a corresponding number of * appears to indicate the memory status, as follows.
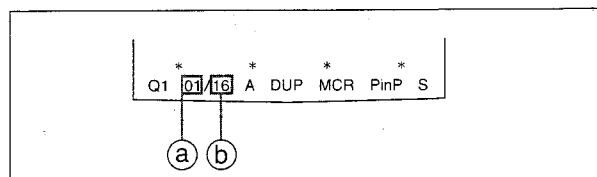
ⓐ Indicates the cursor position (green). The image will be stored to the corresponding position on the selected memory page.
ⓑ Indicates the printout type.

[8] **Q (print quantity) display**
Indicates the number of copies to be printed. This item blinks while the printer is busy.

[9] **Printer setting status display section**
The corresponding currently selected status is displayed when the USER PRESET, MULTI PICTURE, PRINT QTY, INPUT SELECT or PRESET button. Each time you press these buttons, their selections are switched and displayed in order.

MC-Service

Menu screen

Menu screen tree chart

The menu screen configuration is shown using the tree-chart. For details, refer to the pages indicated in ( ).

Initial screen (appears when the printer power is turned on.

Regular screen

When the CAPTION INPUT button is pressed:

When the ANALOG button is pressed:

Menu screen
One of the following three screens is displayed when the MENU button is pressed.

When the R/G/B/D/L button is pressed:

CAPTION
input screen
(page 34)

COLOR ADJUST
menu screen
(page 59)

FUNCTION-SETUP
menu screen
(pages 25, 38 and 66)

PRINT-SETUP
menu screen
(pages 30, 31, 57 and 63)

SYSTEM-SETUP
menu screen
(pages 54, 69, 71, 72, 74, 75 and 77)

ANALOG SETUP
menu screen
(pages 52 and 56)

SIZE SHIFT SETUP
sub menu screen
(page 64)

Menu screen display

Example: SYSTEM-SETUP menu screen

```
MENU
    SYSTEM-SETUP/PRN/FUNC
▶DISPLAY      : ON/OFF
 BEEP         : ON/OFF
 LCD          : ON/OFF
 LCD-CNTR     :    0   ......|.......
 BAUDRATE     : 12/24/48/9600
 MONITOR      : THRU/EE
 USER  SET    : 1/2/3  [EXEC]


Q1   1/4   A                        S
```

Cursor   Item   Selection

Index

MC-Service

Index (continued)

MC-Service

AVERTISSEMENT

Afin d'éviter tout risque d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

Pour UP-5600MDP
Symboles

Ce symbole signale un équipement de type B selon la classification de la norme médicale internationale IEC Publication 601-1 Sécurité médicale d'équipements électriques.

Ce symbole indique la borne équipotentielle qui ramène les différentes parties d'un système à la même tension.

Pour les utilisateurs en Europe
Instructions de sécurité importantes en vue d'une utilisation dans un environnement médical

1. Tous les équipements raccordés à cet appareil doivent être agréés suivant les normes IEC601-1, IEC950, IEC65 ou les autres normes IEC/ISO applicables à ces équipements.
2. Si cet appareil est utilisé conjointement avec d'autres équipements à proximité d'un patient*, ces équipements doivent être alimentés par un transformateur d'isolement ou raccordés à la mise à la terre du système par une borne de terre de protection sauf s'ils sont agréés suivant la norme IEC601-1.

   * Proximité d'un patient
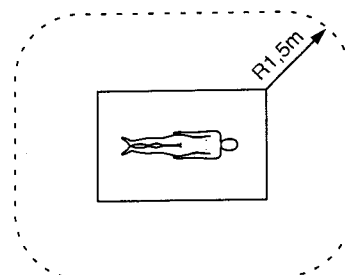
3. Dans le cas d'une connexion à d'autres équipements, le courant de fuite peut augmenter.

MC-Service